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PATHOLOGY OF INSANITY.\*

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It is well known to the Association that for several years past we have been engaged in pathological investigations, and more recently, in special microscopic work. It is not my purpose to give, in any detail, what has been done, but rather, a brief summary of some points of interest. A large number of autopsies have been made, and the brain and portions of the spinal cord have been microscopically examined, in many cases, embracing those of every form of insanity, including general paresis and epilepsy. We have now a large number of microscopic slides of nervous tissue, and a large collection of photo-micrographic negatives, and I bring to the attention of the Association, in the portfolio here presented, a series of photographs taken from the specimens mentioned, accompanying each of which is a descriptive text.

For the sake of conciseness, in this brief synopsis, I make no allusion to the appearances of the membranes,

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\* Read before the Association of Medical Superintendents of American Institutions for the Insane, at Baltimore, Md., May, 1873.

choroid plexus, ventricular lining or the brain itself, which are obvious to the naked eye, and pointed out by authors, generally, in autopsic history, although they have been minutely recorded in each case, and will hereafter be considered in regard to histological structure. These investigations have been commenced with the purpose of studying especially the character and nature of any deviation, appreciable only by the microscope, that might originate in the fundamental structure of the brain, in the insane. We have also been particularly desirous of ascertaining if any distinct special morbid change could be detected in those instances where the ordinary post-mortem description of the membranes and cerebral tissue represent them as sound in their intimate organic structure.

On comparing the various alterations displayed by the cases studied, it seemed to be a phenomenon of quite regular occurrence that the morbid process affects in the beginning and in a general manner the central elements, viz., that the nerve cells and neuroglia undergo changes in their intimate composition and arrangement, before the integrity of the conducting elements of nerve fibre become notably impaired.

The increase of interstitial amorphous matter between the fundamental nerve elements, has been prominent in every case, and, while the connective fibres have been multiplied considerably beyond their natural degree, the scarcity or complete absence of connective nuclei has also been no less constant.

In chronic mania and dementia the increase of interstitial, granular, amorphous matter and connective fibres, or, in other words, the hyperplasia of neuroglia, both in the grey and white substances has been characteristic of the disease, reaching the highest limits ordinarily in the grey matter and appearing more conspic-

uously in the anterior than in the posterior regions of the brain. The alteration has displayed itself in some places in close connection with the capillaries; generally, however, the degeneration has originated in localized regions, distinctly parceled out as it were, from the rest of the cerebral tissue, circumscribed in a cystic cavity, formed by condensed minute connective fibres. These isolated masses are constituted of a granular and friable matter becoming semi-transparent in its advanced stages, and in some cases converted into a serosity.

The granulations which constitute these morbid products would not seem to be fatty, as they are neither dissolved by ether, chloroform or the alkaline solutions, and become darker and more distinct when treated by acetic acid, and while preserving their solid form they do not exhibit a homogeneous mass. The study of these developments would lead to the conclusion that they take their origin in the interstitial elements of the nerve tissue, and that in their growth they determine, through a merely mechanical compression, the reabsorption of the nerve cells and fibres. The cavities in which they are contained vary in size from that of the nuclei of multipolar cells to that which can be seen by the naked eye, and constitute the pisiform cavities which give to the brain sections in cases of chronic insanity, the gruyere cheese appearance described by French alienists. That such pisiform cavities may occasionally result from minute capillary hæmorrhages is a well acknowledged fact. Then the surrounding tissue of the cavity displays a peculiar discoloration, changing from yellow to a dark rusty brown or ochre color, due to infiltration of the coloring matter of the blood. The cavities here described exhibit no such tint permeating the surrounding tissues, nor are they in direct connection with the capillary vessels, as the cysts proceeding

p. 10

from old apoplexies always are. In the condition under consideration the brain elements disappear by reabsorption, in scattered points, under a circumscribed necrobiosis originating purely from local conditions of the morbid process, developed in the brain. Be this as it may, it seems evident that such isolated absences of tissue throughout the cerebral hemispheres, as above described, can not be regarded as a consecutive effect of distant lesions. How much share these broken connections between the perceptive brain cells, and those of the peripheral part of the special senses take, in the causation of the hallucinations and other strange sensorial phenomena, peculiar to insanity, is indeed difficult to determine, although the fact appears worthy of notice in this special connection.

The trouble which brings about the alterations in the cerebral tissue in general paresis, it is acknowledged, originates mainly in the vascular system, as has been shown by the researches of Virchow, Westphal, Salamon, Lockhart Clark, Sankey, and others, and to this origin must be ascribed the epileptiform symptoms ordinarily attending general paresis, and deriving their source in local disturbances of the cerebral circulation. The change begins in the adventitious sheath of the arteries and veins, the arterioles and larger capillaries, first described by Virchow and Robin, the so-called lymphatic space of His which becomes distended in a small portion of its trajet, sometimes uniformly around the minute vessel within, at others bulging out laterally, the enlargement thus produced being filled with lymph, granular cells, and hæmatic crystals or granulations. More generally the vessel is twisted or elongated, and exhibits a fine fatty degeneration of its coats which are often torn asunder, allowing the blood to escape into the lymphatic surrounding sheath where it



coagulates and ultimately undergoes a fatty change. The nervous elements in the vicinity of the blood-vessels are also involved in their structure and they equally undergo an alteration characterized by a multiplication of the connective fibres and molecular granulations. To such a proliferation of connective elements is due the peculiar firmness and pellucid appearance with change of color displayed in the grey substance, and which Baillaierger (*Annales*) has described as one of the characteristic pathological changes of the brain in general paresis.

The condition of the brain in epileptic insanity and especially the alterations in the medulla, agree in appearance and character with those pointed out and described by Dr. Echeverria in his work on epilepsy.

The instance of syphilitic insanity, of which several photo-micrographs are presented in the portfolio, adds further proof to the fatty degeneration which constitutional syphilis brings about in every tissue.

A fact which seems of the utmost importance is the similarity of histological changes attending the different forms of insanity, as represented in the photo-micrographs, and, indeed, in all the cases which have fallen under observation. If such regularity is displayed in future investigations, as I am strongly led to believe will be the case, this fact will practically confirm the principle, that, in insanity, we have to contend with only one disease, manifesting itself under different phases in its progress and results. The correspondence between degenerations of the cortical substance and in the central ganglia pointed out in France by Luys, Laborde, and Charcot, and in this country by Echeverria, has found further confirmation in these researches; whereas, lesions in the structure of the third left convolution, as Bouchard,

Echeverria, Batty Tuke, and others, have already shown, have not necessarily involved the existence of aphasia or amnesia. The importance attached to this subject has led me in every instance to direct investigation particularly to this region of the brain. I simply state here the result, hoping to treat this question at some future time, when the material may be sufficiently abundant to determine the exact value of the ingenious theory so confidently put forth by Broca.

The capillary system has participated in the morbid process in every instance, but it has seemed to be primarily affected, particularly in general paresis and epilepsy. The nature of the alteration has been ultimately atrophic in every case, that is, resulting in the disappearance of central nerve elements, to wit: nerve cells and fibres, with a remarkable hyperplasia of amorphous matter and connective fibres. In acute cases the involvement of the fundamental elements in the morbid process has appeared to have taken place rapidly and without any observable effusion of lymph throughout the tissue. Such a morbid process can not be looked upon as of an inflammatory character, for no proliferation of capillary vessels, or the so-called inflammatory corpuscles of Bennett, have occurred. The trouble here has rather betrayed itself in a condition of intense irritation, exhausting the power of the cerebral cells and ultimately bringing on their consecutive necrobiosis. This assumption is perfectly consistent with the phenomena of restlessness and delirium found in acute mania, and is furthermore strengthened by the discovery made by Brown-Séquard, that in cases of paralysis from injury without irritation of the nervous centers the consecutive alterations of nutrition are slow in their progress, while, on the contrary, with irritation of the brain and cord, alterations of nutrition and structural changes supervene rapidly.

The distinction between the appearance of the cerebral tissues, in the specimens presented, of mania and those of general paresis and epileptic insanity, would seem to uphold the separate class assigned to the last two forms of disease in the classification adopted.

Although the cases thus far examined may be regarded as insufficient to establish general conclusions, they go to strengthen the conviction sustained by the laws of general pathology, that insanity is a physical disease of the brain, and that the mental phenomena are symptoms. Further, that the microscope, with patient and close investigation, will continue to disclose structural changes in the cerebral tissue, as marked as those heretofore unsuspected, when examinations were limited to the scalpel and naked eye; and in these investigations, when the entire range of the disease, in every stage of its progress, shall have been brought under the microscope, we may be able to solve the problem of the morbid processes denominated insanity.

Another conclusion to which these investigations would naturally lead, is, that the variety and changes in the predominant symptoms of insanity may acknowledge their cause, not so much in the variety of lesions as in the special parts of the cerebral centers which are morbidly involved in each case; or to bring the idea within narrower limits, that emotional, ideational and motor disturbances, have their foundation in the extent and degree to which the nerve elements that minister to the execution of intellectual and motor acts are involved in the lesion. When the disease reaches its ultimate stage, all distinctions cease, dementia being the same closing stage of every so-called form of insanity.

## ON EXPERT TESTIMONY IN JUDICIAL PROCEEDINGS.

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There is a growing tendency to look with distrust upon every form of skilled testimony, and to abandon it to the risks of polemical detraction and obloquy. Nor is this strange. Such fatal exhibitions of scientific inaccuracy and self-contradiction as have been presented to us in the cases of Huntington, Cole and McFarland, and later and less excusably still in those of Schoeppe, Mrs. Wharton and Geo. Francis Train, can not but weaken public confidence in the value of all such evidence. If science, for a consideration, can be induced to prove anything which a party litigant needs, in order to sustain his side of the issue, then science is fairly open to the charge of venality and perjury, rendered the more base by the disguise of natural truth in which she robes herself. In fact, the calling of experts has now come to be regarded as the signal for a display of forensic pyrotechnics, beneath whose smoke and lurid glare, law, common sense and unalloyed justice, are swept away in a whirlwind of muddy metaphysics.

It is needless to say that all honest men, laymen and lawyers alike, look upon this as a judicial farce and a degradation of the ethics of jurisprudence, even though technically defensible on the basis of orthodoxy in procedure. But, when anything in law, government or conventional usage has become inherently bad in its essence, as well as in its operation;

when by common consent and impulse, good men unite in its condemnation, then, it is not only absurd, but unjust, to plead prescription in its behalf, or ask the cowardly question of how can we do better without disjoining old rules, and dethroning old idols of professional worship. There is a law of demon-worship—an enslavement to *cultus* everywhere inherent in the human mind, and the conservatism of law tends, unfortunately, but too strongly to confirm the right of the *eidolon specus* to occupy its old throne, simply because no one can remember when it was not king. Its only right is, but too often founded upon the antiquity and passage out of memory of its day of original usurpation.

That these facts, in relation more particularly to expert testimony, are attracting public attention everywhere, and silently preparing the way for some speedy demand upon the law-making power to cast out the old fetich of procedure by which courts are still fettered, is becoming matter of daily observation. And the sign is so good and augurs so well for the redemption of the law from the embarrassing clogs of tradition, that we feel it a duty to hasten the time of this enfranchisement, by bringing the matter forward with all the power of presentation of which we are capable.

In their last annual report to the Legislature, the Managers of the New York State Lunatic Asylum feel themselves called upon to allude to the subject in the following very pertinent observations:

It may not be amiss to observe that this matter of the testimony of experts, especially in cases of alleged insanity, has gone to such an extravagance that it has really become of late years a profitable profession to be an expert witness, at the command of any party and ready for any party, for a sufficient and often an exorbitant fee; thus destroying the real value of the testimony of unbiased experts. Vaunted and venal expertness is usually worthless for



evidence; and yet such testimony is getting to be in great demand. One expert, whether real or assumptive, is set up against another; and finally it will result that, by competition, pretending inexpertness will prevail, by numbers, against the real expertness of those few thoroughly qualified men whose judgment is the mature experience collected from years of daily study and practical observation. Obviously it does not become States, or great tribunals, or public justice, that the testimony which settles matters of weight should be trifled with as it is for an emolument; and experts should only be called, as formerly they were, by the court itself, on its own judgment of the necessity requiring them; and when called at all, they should be the sworn advisers of the *court and jury*, and not witnesses summoned in the particular behalf of any party; nor should they be permitted to receive either fee or reward from any party, but only from the court or the public. Capable judges are competent to say, in any case, whether the court requires the evidence of experts for its information in matters of technical knowledge or science, and also to say who shall be particularly summoned for his acknowledged expertness; and should, therefore, have the control of that sort of testimony, which is only allowable to enlighten the court and jury, and not to be the ordinary captious weapon of attorneys and counselors, nor to be the theoretical, one-sided opinions of sciolists, founded on some hypothetical case which deflects more or less from the actual truth of the real case in question.

That some remedy is called for in the interests of both humanity and justice all are ready to admit, and that the remedy should be as far reaching in its effects, as the disorder it is intended to alleviate, is equally apparent. The difficulty of making any change, however, has been generally over-estimated, from the assumption that it would necessarily derange well-established principles of jurisprudence. But this is a danger more imaginary than real, and like many other figments of the imagination grows smaller the nearer we approach to it. Inasmuch, too, as methods of existing procedure are, and have ever been, in fact, in opposition to established principles in the law of evidence, it is only necessary to return to them, and in the very oppo-

site language of Lord Coke *petere fontes quam sectari rivulos*, in order to solve what has generally seemed a legal enigma. For all writers upon Evidence are forced to call expert testimony an *exception* to the ordinary forms which it assumes before courts, although offering no suggestions towards altering the rules of procedure governing its introduction and rendition. These rules having been originally designed to meet the requirements of ordinary testimony alone, the attempt to adapt this *exceptional* form to the existing practice of *Nisi Prius* courts has resulted in producing judicial ambiguities and contradictions, such as are to be found in no other department of jurisprudence. It is impossible, in fact, to reconcile the duties of experts, with the position they are constrained to occupy in courts, nor to accommodate the present rules of evidence to the ambiguous phases which theirs assumes.

The most cursory glance shows us that the Common Law procedure relating to the whole field of expert testimony, whether in the method of summoning, of examining, or of presenting such testimony to the jury is paradoxical in principle and self-contradictory in practice. The very term witness, when applied to an expert, is at the start a legal paradox. It owes its origin to the custom of allowing experts to be summoned by either party litigant, and in the exclusive interest of that side from which they either have received, or expect to receive a retainer. Consequently, and in that capacity, they come upon the stand with minds prepared to favor only that view of the case which they are retained to sustain. Being also generally, first consulted in private; hearing only the statements of one side, and thus forming a judgment before coming into court, it is inconsistent with the laws of mental action for them, willingly to recall that judgment, so as to place their

public opinion in direct antagonism to their private, thereby demolishing the case and forfeiting the confidence of those who have given them by their patronage, both a reputation and a fee. Thus fettered on the very threshold of his service by being reminded of what he is expected to do towards sustaining one side, the expert starts under a cloud of suspicion and distrust, which justifies that other and equally absurd though consistent proceeding of the cross-examination of an *expert* by a *layman*. The whole drama is, in fact, a tissue of legal inconsistencies, all springing from that one tap-root of error, viz., the habit of considering the expert as a strictly party witness and allowing him to be summoned as such.

Legally speaking, witnesses are limited to facts observed by them, and while opinions upon such facts may very properly be given in all matters of ordinary observation, *opinions* upon facts never personally observed, or opinions upon facts requiring *special* knowledge to interpret them, constitute, not testimony, but a *quasi-judgment* upon them. The Civil law, with an acumen pre-eminently distinguishing its philosophy, had established boundaries to testimony that have required no sensible change, except in enlargement, to meet the demands of modern society. Wherever, therefore, that majestic system of jurisprudence, which has been a convenient treasure house for even the common law of England to draw from, has been adopted, no contradictions and no ambiguities in the application of expert testimony before courts are known. Under its practice the expert was considered simply as an *amicus curiæ* whose opinion was *ex vi termini* a *quasi-judgment* in the premises. Nor could it be otherwise, for the separation of the *jus* from the *judicium* rendered it quite possible to unite the functions of expert and

judge, without derogating, in the least degree, from the strictest operation of the *jus*, since this latter always furnished the principles by which the *judicium* was to be applied to a given case.\*

Whatever may be said in fact of the duty of courts to prevent experts from encroaching upon the province of the jury by pronouncing judgments on issues before them, it should never be forgotten that the calling of an expert to pass upon the merits of an issue joined is an open confession of its incomprehensibility to a jury, and since they can not determine it themselves, do they not thereby ask of the expert, as they do of the court itself under other circumstances, for a ruling or judgment upon that issue? In the one case they ask the court for a ruling upon the *municipal* law applicable to some point; in the other they ask the expert for a ruling upon the *physical* law applicable to some equally dubious point. Is the answer or opinion less a *judgment* when uttered by the expert than when uttered by the judge? One is a minister and interpreter of municipal laws, the other of physical laws, but both are legally, because rationally judges, each in his own province.

In other fields of investigation courts recognize these principles. Thus courts of equity are in the habit of sending issues of fact to be tried before masters in chancery, and their reports are always accepted as preliminary judgments upon the issue tried before them, requiring only the subsequent confirmation of the court to give them plenary authority. A similar rule obtains in many European countries in relation to issues involving the necessity of expert opinions. And in fact this is the only proper solution of the problem; since it is plain that neither under the civil, nor even the common law is the expert regarded as a witness proper, being

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\* Maynz, *Elemens de Droit Romain*. Vol. 1., p. 348.

more nearly a referee and physical juris-consult specially called for this purpose. It is manifestly wrong, therefore, to define his opinion as testimony, when, in truth, it is rather an opinion upon testimony, a judgment upon the physical merits of a state of facts agreed upon.

The expert being in no proper sense of the word a witness, should have his status definitely determined, should be free from alliances with either party, and give his opinions only upon an agreed statement of facts. In other words he should arbitrate and not testify. So long as he is introduced as a party witness, the opposite side have the right to confront and necessarily to cross-examine him, but how unphilosophical, not to say ridiculous even, is the idea of an expert being cross-examined for the purpose of testing his professional knowledge, by a layman. The entire effect and benefit of his participation in any trial is thus mutilated, deformed and nullified by the legal paradox which assumes him to be a witness. Witness to what? His own opinion only.

In whatever direction we look, we see how inevitably these conflicting principles arise from the first departure in recognizing the true position of the expert. Having once been summoned as an ordinary witness by one party, he is fore-doomed to that position throughout his entire service in court; is cross-examined as such—and his opinions before the jury lose proportionally the weight which, but for this, would attach itself to them. No jury can be expected to place absolute confidence in the statement of a witness called exclusively in the interest of one party. They will balance probabilities even in the matter of his *professional accuracy*, whenever his opinions conflict with their own pre-conceived ideas upon the subject. To that ex-



tent, therefore, they will sit in judgment upon his opinion, rather than accept it as a specific adjudication in a matter admitted to be beyond their knowledge and comprehension. Nor is it laying too much emphasis upon the results of such repudiation of skilled testimony to affirm, that it begets an overweening self-confidence in jurors, which is not slow to extend from the opinions of experts to those of the court. Every verdict against evidence, or every analogous omission to apply the principles laid down in a judge's charge, to the case at bar by a jury, are but confirmations of these assertions.

It is from an unwillingness to accord any distinct legal status to experts, after summoning them *eo nomine* before courts, that has resulted the chaotic state of our jurisprudence upon this subject. No chapter in the law of evidence presents more conflicting decisions than this. In fact every court seems to have had some distinct, and the same court at times diverse views upon the character of this form of testimony. Nor is it to be wondered at, since every common law court has persistently insisted in treating the expert as a party witness while seeking his opinion as an impartial judge. The next error has been that of allowing any one to be introduced before a jury as an expert without first putting him upon his *voir dire* to ascertain whether his competency agreed with his pretensions. If anyone, as is now the practice, may be admitted to testify as an expert, then the term is one of multitude and not of exception.

Some idea of the diametrical difference between courts in their opinion of the basis of qualifications in experts, may be had from the citation of two cases only, where in the first one, (*Tullis v. Kidd*, 12 Alab., 648) it was held sufficient that a party had

studied medicine, although he had never practiced it, while in the second (*Emerson v. Lowell Gas Light Co.*, 6 Allen, 146) it was held that a physician who had been in practice for several years, but who has had no experience as to the effects of illuminating gas upon the health when breathed, can not be allowed to testify thereto as an expert; and *experience* in attending upon other persons who, it is alleged suffered by breathing gas from the same leak, is insufficient. This case presents us with a complete illustration of self-contradiction in the form of that logical fallacy known as a negative pregnant. It first lays down the principle that a physician who has had no experience in a certain direction is not an expert *quoad hoc*, and then asserts that one who has had experience in this very direction is equally incompetent *quoad hoc*.

In order to obviate the effects of such contradictions in the law of evidence, it would be well, for it is entirely possible, to remove all experts from the field of testimony and place them in that of arbitration, so far as any particular scientific question is to be decided. For this purpose, whenever such an one arises whose solution is material to the determination of the matters in dispute, let a feigned issue be made upon the point, and referred for judgment, upon evidence agreed upon, to three experts, one to be selected by each party litigant, and the third by the court, such experts to sit and determine at once the question in dispute, and their opinion to be received by the jury as conclusive of the issue tried by them. In this way each party would be represented, just the same as if the expert had been called into court by him, and the evidence on which an opinion is sought being agreed upon, time and arguments would be saved. Nor would there be any necessity either for a direct or cross-examination,

since there would be no *witness* to require such, and the opinion of experts being given upon deliberation, and while they are themselves freed from the vexation of a personal discussion with counsel, would be of a more satisfactory character to all parties concerned by expressing the best possible efforts of an unprejudiced mind.

And with the further view to secure economy in time from the application of these views to practice, counsel desiring to invoke the assistance of experts should be required to give notice to the court and opposite party of such intention, so that the scientific issue upon which their services will be required could be tried in advance, and the ordinary course of judicial proceedings at Nisi Prius not be interrupted by the interpolation of new and exceptional matter. We need not point out how much this would tend to simplify and abridge trials for homicide when the plea of insanity is suddenly sprung upon the court, and an entire shifting of the scenes in the drama of evidence becomes necessary.

We have said nothing about *qualifications* in experts, because that is a matter which it may be assumed every court would see to with more jealousy and vigilance, than if, as at present, each party were allowed to select those experts only who would best subserve their interests. For, whenever expertism shall be known to represent in fact what its name implies in theory, those offering themselves as practitioners in that field, will be careful to formulate only such opinions as will stand the test of future criticism. At present it is the victory of the hour that alone engages the efforts of *party*-experts, many of whom having no reputation to lose, throw themselves recklessly and to that extent wickedly, into the high seats of oracular authority regard-

less of the consequences to the professions which they so often *mis*-represent.

It can not be necessary to enlarge further upon a state of facts like these, which, both in this country as well as in England, casts a periodical shadow upon the wisdom of judicial procedure as the exponent of perfected law. And having traced the evil to its parent source in the erroneous classification of experts among witnesses, no large or disturbing change is required to secure the needed remedy. Let us but remove the cause, and its consequences will die with it. *Cessante causâ cessat effectus.*

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## ON THE PERIVASCULAR SPACES IN THE NERVOUS CENTERS.

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It is well known to those who, in the past ten years, have been interested in the progress of the microscopical anatomy of the nervous centers, that the existence of perivascular spaces, of a system of canals surrounding the vessels which penetrate the substance of the brain, has been a subject of discussion not yet satisfactorily terminated.

Virchow,<sup>1</sup> who first of all touched upon this subject in a paper, "On the Dilatation of Smaller Vessels," gave us the description of a homogeneous tunic, a sheath surrounding the arteries, the veins, the arterioles and ducts even of a capillary character, and observed in the spaces between this adventitious tunic and the walls of the vessels themselves different kinds of cell formations, sometimes simple granulated cells, some-

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(1) *Archiv.*, 1851, III.

times transformed into fatty globules intermingled with lymph-corpuscles and various other deposits.

In 1859, Robin,<sup>1</sup> who apparently had no knowledge of the discovery made by Virchow, with the exactness of a genial interpreter, supplied us with an ample description of the adventitia of the cerebral vessels, the contents of the space formed by this involucrium, and his illustrations leave no doubt concerning the correctness of his observations in every respect.

After Robin, 1865, His<sup>2</sup> took up the question and was the first who applied the injecting method to the examination of these canals. Fromman,<sup>3</sup> 1867, called our attention to the contradictions in the observations and conclusions made by His, and considered the so-called perivascular spaces, or *canals outside* the adventitious tunic of Robin, as *artificially* produced by the injected liquid.

Roth,<sup>4</sup> 1869, observed, in sections made through the hardened brain substance, the existence of fine filaments transversely connecting the brain tissue and the walls of the contracted vessels; and Obersteiner,<sup>5</sup> 1870, maintaining the views of His, proved the existence of spaces of a similar kind around the nerve tubes as well as the ganglion cells themselves.

The first then, who cleared up these somewhat complicated conditions, was Golgi,<sup>6</sup> 1871, in his excellent

(1) Robin: Recherches sur quelque particularités de la structure des capillaires de l'encephale. *Journal de la Phys. de l'homme et des animaux*, 1859, II.

(2) Ueber ein perivasculares Canalsystem in den nervösen Central-organen und ueber dessen Beziehungen zum Lymphsystem. *Zeitsch. f. wiss. Zoologie*, XV.

(3) *Untersuchungen*, Th., II.

(4) Zur Frage der Bindesubstanz in der Grosshirnrinde Virchow: *Archiv*, XLVI.

(5) *Wiener Academie-Berichte*, Bd., LXI, Abth., I.

(6) Contributione alla fina anatomia degli organi centrali del systema nervoso. *Revista Clinica*, Nov., 1871.



researches on the "Microscopical Anatomy of the Nervous Centers," who exposes in a most convincing manner the inadmissibility of the views of His and his followers; and his interpretations have been confirmed by Boll,<sup>1</sup> in their utmost extent.

A somewhat peculiar position has recently been taken by Batty Tuke,<sup>2</sup> a most careful English investigator in "The Morbid Histology of the Brain and the Spinal Cord observed in the Insane," a position which again threatens to complicate the question.

Batty Tuke, abandons the former theory of His, regarding the perivascular canal.

"But as the existence in health of a space between the brain substance and the vessel is now more than doubtful, this term must be departed from, and the following experiments and observations are put forward to indicate that the existence of a canal around a vessel is an abnormal condition." . . . . .

"In every section I have examined, in which blood has remained in the vessels, there is no evidence of the existence of a perivascular canal." . . . . .

"Even supposing the actual existence of a small lymph space around a cerebral artery, it is difficult to understand how the backward flow of its contents could be carried on against the constant counter-impulse of the blood. His himself has abandoned the theory, and Rey and Retzius confirm him in his departure from it. A 'perivascular canal' must be regarded as a morbid condition, and in this indicative sense the term will be in future employed by me."—10 *Ibid.*

However, at the same time, he denies the existence of a lymphatic sheath around the vessels of the brain and the spinal cord, and gives us the description of "a thin hyaline membrane, as thrown out by the tunica adventitia, which invests the vessel in many forms of cerebral disease."

"There exists," he continues, "some discrepancy in the description of this membrane by various authors, some speaking of it as a

(1) *Archiv. für Psychiatrie*, IV., I.

(2) *British and Foreign Medico-Chirurgical Review*, CII.: April, 1873.

cellular fibroid secondary sheath, others as a hyaline fibroid, and others as a purely hyaline membrane, homogeneous and clear, which at first is non-fibrillated, but as it goes on contracting becomes less hyaline and more fibrous, like a sheath."

"The examination of a very large number of prepared sections and of recent specimens has convinced me of the existence of a membrane *outside the adventitia* to which the two latter descriptions are applicable. *I believe it is continuous with the sheath of pia mater* surrounding the vessels as they enter the substance of the brain, and *that it exists around every artery as its normal sheath*, although in perfect health it is not easy of demonstration. Robin found it in every subject he examined, and Clarke demonstrated it in the brain of a healthy young man who had been accidentally killed, and I can show its presence in the medulla oblongata of a cat killed by cut throat. In health it is exceedingly thin, perfectly homogeneous, non-fibrillated; in fact, a pure hyaline membrane, forming a somewhat loose envelope to the vessel. At bifurcations it is not intimately applied to the angle, but forms a triangular sac, and becomes again continuous a short distance beyond it. In the same way it ensaculates abnormal tortuosities and kinks. Judging from the fact that it is invariably demonstrable in empty perivascular canals, it would appear that it is rendered thicker by being subjected to lymph exudation. It also becomes more apparent in advanced age. When in this condition it is easily recognizable in the *pia mater*, which has been treated with water only for the purpose of cleaning, and in squeezed-out fresh brain which has received no treatment at all. It is true that glycerine, camphor-water and other agents render it more obvious, but their employment is by no means necessary. In the highest form of morbid development it is to be seen intimately attached to the brain-wall of a perivascular canal. So closely does it adhere at times, that it can be seen lying on the surface of the section, having been dragged out by the knife, but still clinging to the edges of the canals."—Page 454.

It is apparent in these expositions, we have to deal with quite a new interpretation. Batty Tuke makes a clear distinction between the *hyaline membrane* of Robin, Lockhart Clark, Rokitsky, Wedl, Koelliker, Sankey, Rindfleisch, &c., and the *adventitious tunic* of Virchow, Robin, Fromman, His, Golgi and others, but

he does not claim the presence of this *fourth* membrane itself, lying *outside the adventitia*, as a morbid product but only the thickened condition of the same in certain cases.

In regard to the investigations since my connection with the Asylum, they embrace nineteen brains of insane persons, and one of a young man in full health, suddenly killed on the railroad. Of these I would state the following anatomical facts.

In every case examined carefully, a covering surrounding the vessels which penetrate the brain substance, could be made visible, a sheath inclosing the vessels sometimes more and again less distended, and sometimes closely adherent to the inner coats. The contents of this sheath, when still expanded in its natural condition, were invariably recognized as consisting principally of lymph, and the direct communications of these ducts with those which surround the vessels of the *pia mater*, were easily demonstrated by injections of the lymph ducts of the *pia mater*.

What are these ducts and what is the nature of the membrane, forming the sheath, in an anatomical and physiological point of view? I can not but adhere to the opinions of the first discoverers, Virchow and Robin. It is evidently nothing more or less than the adventitious coat of the vessel itself, destined to carry away the overflow of the blood, the plasma which has exuded from the capillaries into the tissues, and which has not been taken up again into the venous current.

Besides the homogeneous tunics, there are no other membranes visible but the two in a close connection form the walls of the vessels themselves. I have never observed, either in sections, or in carefully insulated specimens of larger vessels with numerous branches, after removing the sometimes very delicate tunics, any

traces of another which could be regarded as an adventitious coat of the vessels. But the peculiarity that even ducts of a true capillary character also show the presence of these membranes and in direct communication with those of larger branches, renders it more than probable that they represent nothing more or less than the very adventitious coat itself.

That the spaces enclosed by this membrane and the media of the vessels may be found more or less distended, and in morbid affections of the vascular system sometimes in an extraordinary state of expansion, is a very well known fact. Also deposits of foreign materials, the exudation of fat globules, pigment bodies, crystals, etc., have been noticed by various authors. The presence of such deposits does not always indicate a morbid condition, as I have demonstrated them in specimens taken from a sound brain, as well as from a diseased one. But the extent to which they appear, is undoubtedly a matter of more or less importance, and in cases of general paresis, I have observed these spaces, here and there, entirely filled by cell formations of an irregular and spongy texture, apparently new formations, sometimes surpassing three or four times the inner caliber of the capillary vessels.

That on the other hand, frequently reported congestions, the overflow of blood and increased exudations will produce a dilatation of the brain substance itself, surrounding the vessels, is a presumption which may be admitted, although the histories of them can not be obtained. But that such dilatations really exist is an indisputable fact, and that after the reabsorption of the superabundant liquids by the absorbing ducts, these, when relieved from the pressure and contracted again to a uniform caliber, may leave a space between their membranes and the altered tissue of the brain sub-

stances, will be easily conceived, as the fact is in numerous cases observed. But I have never found in these spaces of a morbid development, any traces of organized lymph, nor any deposits similar to those demonstrable in the adventitious spaces as above mentioned. The only microscopical elements visible in these spaces, are fine filaments transversely crossing the space and forming a connection between the dilated tissue of the brain and the enveloping sheath of the vessels.

The question arises, what is the nature of these filaments? For a long time I was unable, from the apparently conflicting facts, to form a judgment. However, more recently, I subjected these formations to careful comparisons with similar conditions observed in specimens of hardened brain, and with the application of highly magnifying powers, have solved the question to my full satisfaction.

In preparations taken from hardened brain, as the hardening process depends upon a deprivation of water, the vessels will be found always in a more or less shriveled and contracted condition. The really existing physiological space enclosed by the adventitious tunic will very rarely be visible even in the thinnest sections. And the more the action of the hardening agent advances, the less distended will these spaces appear; and in most of the cases we may find the thin adventitious membrane so closely adherent to the media, that neither a separating space nor the membrane itself seem demonstrable by our optical instruments. It is for this reason that in so many cases the natural condition has been overlooked. The space produced by the contraction of the adventitia was accepted as a true canal around the vessels. The fact that it was possible to fill these canals by an injection, especially by the use of the puncturing method, could only confirm this theory. In



other cases in which the still expanded, adventitious covering was seen containing the organized lymph, this state was confounded with the former one. And, Batty Tuke and others, in the belief that the one false interpretation had to fall with the other, created the new theory of this hyaline membrane. Nevertheless, he is indebted to Virchow and Robin for the explanation of what he himself calls the adventitious coat.

Although in all specimens of hardened brain, as above mentioned, the true adventitious membrane of the vessels is only with difficulty demonstrable, it is virtually always existing. In a closer examination of the external surfaces, such vessels will never show the smooth appearance of the medium coat or of the simple membrane of a capillary. They are uneven, shaggy and trimmed with small bunches of twisted fibres, when insulated, and in sections, there are in these artificial spaces the same transversely crossing filaments observable, as in the above described spaces of a morbid origin. The application of higher and well defining powers will leave no doubt as to the determination of their nature. They represent the so-called Deiter's cells of the connective tissue of the brain substance, these peculiar brush-like or radiant-like cells which, adherent to the adventitious coat of the vessels, in consequence of its contraction, appear as drawn out from the molecular mass, which composes the parenchyma of the nervous centers.

There remains at this time no other question to solve. The great diversity of the opinions are undoubtedly, for the most part, due to the various methods of investigation employed by the authors. The injecting method so valuable in its results, may, even when applied with the utmost care, in combination with the puncturing method, produce artificial ducts, especially in tissues

altered by some morbid affections. In consequence of the action of such hardening agents as alcohol, chromic acid, bichromate of potash and ammonia, osmic acid and others, we have to deal with so many changes of the normal structure, that the true anatomical conditions are demonstrated, sometimes only with great difficulty. The examination of the fresh tissues, however, in indifferent liquids, as water, albumen, gelatine, blood-serum, &c., should never be neglected, as it is by the employment of as many different methods of examination as possible, and by the application of theories carefully deduced therefrom, that we will be able to throw further light on regions so attractive to the student of histology.

[To be continued in the April number.]

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## TWO CASES OF PARALYSIS.

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BY DANIEL H. KITCHEN, M. D.,

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**CASE I. *Lead Paralysis.*** Woman, age twenty, single, housework. Patient usually enjoyed good health up to the fall of 1871, when she was attacked with brachial neuralgia and suffered almost constant pain. From this time, she began to run down in her general health, lost appetite, and began to sleep irregularly. She took large doses of opium and morphine to allay the pain. Her complexion became so sallow that she began the use of powdered white lead, by rubbing a few grains over her face daily; says a number of ounces were absorbed in this way. Early in the spring of 1872, stopped the local application of lead, and for a month following took a few grains by the mouth each day. In June following, she had paralysis of both

hands, with slight attacks of colic. The paralysis of the extensors of the hands and fingers was complete, so that the hands hung down helplessly. No special treatment was pursued till August, 1873. During this interval she suffered a great deal of pain and colic, and required all the care of a child. When we first saw her, her condition was as follows: she was pale, anæmic and emaciated, conjunctivæ pearly, blue line on gums; the paralysis of both hands complete so that they were a dead weight, with marked loss of sensation, from the elbows to the ends of the fingers. She had to be dressed, undressed, and fed, and her weight which in health was 130 pounds, was at this time 96 pounds.

We began at once the application of the Faradic current, about ten minutes each day, the current directed from the elbow to the ends of the fingers. It was fully three weeks before any perceptible benefit was observed; then she began to flex the fingers slightly and had slight motion of the wrist. Not receiving as much benefit as we had anticipated from the Faradic current, we substituted the Galvanic and it has been continued regularly, every second day. At first we used sixteen cells of the Stöhrer battery, and gradually increased the number to thirty-two. From the time of the change of the current, her appetite increased, her general health steadily improved and sensation began to return. November the 1st, her weight was 110 pounds. About the middle of November, she could raise the hands to a level of the arms, but had not sufficient strength to retain them in that position for any length of time. At the time of writing, the sensation is perfectly normal, the muscles of the arms and hands are full and firm, and she has full use of the hands; can dress herself, goes to the table and uses her knife and fork as well as ever. Her weight is now 122 pounds, color

healthy, and she is apparently in her usual health. We propose, however, to continue the use of the current for a time, making an application once a week.

In most instances of lead poisoning, the metal enters the system by inhalation. In this case sufficient was absorbed by rubbing and internal use to produce paralysis. It will be observed that the paralysis affected only the muscles of the forearm and hand, leaving all the other muscles intact.

Neuralgia which almost invariably follows the poisoning by lead, in this instance preceded the paralysis, which was undoubtedly due to the gradual poisoning.

*CASE II. Paralysis of Left Leg with Progressive Muscular Atrophy.* This is the case of a young woman, in apparent good health. While walking up stairs about eight years ago, was suddenly seized with paralysis of the left limb. From that time up to August last, the limb was simply a dead weight, and her case was considered one of hip-joint disease. During all this time there was complete loss of sensation and power, the limb was atrophied and surface cold. With the assistance of a cane she walked with great difficulty, by throwing the foot and leg forward by the muscles of the hip. Her physical health ran down, and she became pale and anæmic.

In August, 1873, the healthy limb measured as follows:

- At ankle joint, seven and one half inches.
- At calf, twelve and a half inches.
- Just above the knee, fourteen and a half inches.
- Middle of thigh, nineteen inches.

Measurements of the paralyzed limb at the same time:

- At ankle joint, seven inches.
- At calf, ten and a half inches.
- Just above the knee, twelve and a half inches.
- Middle of thigh, fifteen and a half inches.

Her weight was 105 pounds. She was pale, emaciated and very anæmic, appetite variable. The left limb was completely paralyzed, the knee, ankle and joints of the toes could not be moved by the will. The surface was cold and the muscles atrophied, as the above measurements plainly show.

On the 15th of August, we began with the constant current, using sixteen cells of the Stöhrer battery. The application was made for fifteen minutes every day, the current being passed from the hip to the toes, and particularly through the knee and ankle joints.

September 15th, the measurements of the paralyzed limb were as follows:

At ankle joint, eight inches.

At calf, eleven inches.

Just above the knee, thirteen inches.

Middle of thigh, sixteen inches.

The circulation was gradually being restored, the limb was covered with a moist warm perspiration and the muscular contractions quite perceptible. She had partial use of the ankle joint and could move the toes readily, but there was no sensation.

October 15th, measurements as follows:

At ankle joint, eight inches.

At calf, eleven inches.

Just above the knee, thirteen and three-quarters inches.

Middle of thigh, sixteen inches.

Her weight at this time was 118 pounds; appetite increased, gait improved, could walk a distance of two miles with ease. At this time we began the use of the metallic plate, placing the paralyzed foot on the plate, and passing the electrode over the muscles of the limb. The number of cells was now increased to thirty-two, and twice a week, instead of using the sponge, we substituted the metallic brush.



November 15th, measurements as follows:

At ankle joint, eight inches.

At calf, eleven inches.

Just above the knee, fourteen and one-eighth inches.

Middle of thigh, eighteen inches.

Weight 119 pounds. Her physical health good, all the functions normal, sensation fully restored and the temperature the same as that of the healthy limb. The current still used every day.

December 15th, measurements as follows:

At ankle joint, eight and a half inches.

At calf, eleven and three-quarters inches.

Just above the knee, thirteen and three-quarters inches.

Middle of thigh, eighteen and a half inches.

Weight, 119 pounds; appetite good, and improvement continues. At the time of writing, 120 applications of electricity have been made. The rapid development of the muscles is shown by a glance at the measurements. The patient has full control over the various joints, and can now move the limb about freely, though some lameness continues.

In this case there have been no neuralgic pains, but anæsthesia was profound. The galvanism has served a double purpose in restoring the general health, by improving digestion, &c., as well as serving the direct purpose of a nerve tonic, and restoring the atrophied muscles to their normal size.

This case was one of spontaneous paralysis. The reflex excitability was not impaired. When the electric current was passed through the paralyzed muscles, she felt them move, and it was visible to the naked eye, and with either the rapid intermissions of the Faradic, or with the constant current, not the least pain was felt, while the same current applied to the healthy limb produced not only unpleasant sensations, but even pain.

## PHOSPHORUS IN INSANITY.

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BY WILLIS E. FORD, M. D.,

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Phosphorus has long been known as a valuable agent in the treatment of certain neuroses, and theoretically holds a high rank in therapeutics. Practically, however, it has been but little used, owing to the difficulties in the way of its successful administration.

It is well known that phosphorus is found in the juices and tissues of the system generally, while in the brain and nerve substance it exists in considerable proportion in the form of phosphorized fats, in a low state of oxidation.

It is an extremely difficult matter for chemists to determine the exact amount of phosphorus in the tissues; for the application of the amount of heat necessary to reduce them, causes it to oxydize immediately or to combine with an alkaline or earthly base, but it has been estimated by Von Bibra to be 1.5 to 1.9 per cent. The researches of Lehmann also prove the existence of an acid phosphate of glycerine in softened brain substance.

There appears to be a larger proportion in the gray, than in the white matter of the brain, but no direct relation has yet been discovered between the mental power of individuals and the amount of phosphorus in the brain.

Most of the ordinary articles of diet contain phosphorus in some form, thus keeping up the supply of this important element. An animal diet is more abundant in phosphatic matter, which will account for the

fact that a greater amount of brain work can be performed, without nervous exhaustion, upon a mixed animal and vegetable diet than upon one exclusively vegetable. The beneficial effect of cod liver oil so commonly observed in nervous affections and in certain wasting diseases, has been attributed largely to the phosphorus it contains in a readily assimilable form. Dr. Weiske in his experiments upon animals, found that the withdrawal of phosphoric acid from the food, proves injurious to the animal and ultimately causes death.

Phosphorus was first used in medicine, by Haller, over a century ago, in the typhoid stage of fevers. As early as 1793, Dr. Wolff reported cases of low fever attended with delirium, petechiæ, &c., treated by phosphoric ether. In 1833, an English practitioner published in the *London Lancet*, his experience in the treatment of cholera by phosphorus. In advanced stages of the disease, he gave one grain every ten minutes; three doses were said to have relieved the cramps, and it was thought by him to be the only reliable remedy. It has been given also in jaundice, chronic diarrhœa, and in typhoid and remittent fevers.

It is apparent, however, that much harm has been done by the indiscriminate use of the drug, and that no special success has followed when it has been thus administered.

A French chemist in testing the action of phosphorus on his own person, took one grain without serious results. On the next day, he repeated the experiment with double the dose; spasms and delirium ensued, and he died a victim of his own experimentation. One grain has been known to cause death in a human being.

Dr. Gray has for years prescribed phosphorus dissolved in oil and in alcohol at a high temperature, for

various disordered conditions of the nervous system, and with very gratifying results. In the October number of this JOURNAL, for 1869, there appeared an article by Dr Andrews, on "The Use of Diluted Phosphoric Acid," which has also been largely used in this Institution. Apart from the liability to undergo chemical changes requiring that they should be freshly prepared, the nauseousness of these fluid preparations of dissolved phosphorus has rendered their administration difficult. Practitioners have been unwilling to give solid phosphorus from the belief that it could not be taken up by the blood, until it had undergone changes in the stomach, that would be injurious to that organ, as well as from the fear of its deleterious effects upon the genito-urinary organs. They have therefore been content with giving its compounds, and it is a significant fact that those compounds, which hold phosphorus in the lowest degree of oxidation, such as the hypophosphites, have proved to be of the most value in the treatment of disease. This has led us to believe that the solid unoxidized phosphorus will give still better results when properly administered.

The common observation of physicians, that in the acute forms of insanity, as in all other cases of increased mental activity, phosphatic matter in excess is found in the urine, while the individual becomes proportionately weak, irritable, and finally exhausted, would seem to point out some relation between exhaustion of nervous force and the rapid oxidation and excretion of phosphorus from the system. The fact that in the stage of exhaustion following mania, the excretion of phosphorus is much less than in health, would seem to indicate that to restore the exhausted nervous sys-

tem to its proper balance, by supplying the wanting element, is a great desideratum in treatment.

Patients passing through the transitional stage from acute to the more chronic forms of insanity, or to recovery, are said to be dementing. Their appetite is usually good, not infrequently abnormally large. They sleep well, and accumulate flesh rapidly. The face becomes puffy and full, and those lines which give character and expression, are more or less obliterated. Instead of being the dial of the thoughts and feelings within, it indicates mental apathy, and often almost entire absence of mental activity. This is but a reflex of the cerebral state, the central nerves of special sense and expression revealing in their peripheral expansion the condition of the central ganglia. The lips become everted and present a pouting appearance, while the ears and finger tips are congested and blue, showing that the vaso-motor system also participates in the general depression and inactivity. At times the skin acquires an unctuous, unnatural appearance, while in other cases there is an extremely anæmic condition of surface, with a cold yellowish skin. These patients are inactive, sit for hours silent, and are indifferent to their surroundings, careless in dress, and often unmindful of the demands of nature. There is also with this marked lessening of motility, and this mental dullness, a corresponding visceral inactivity.

In these cases, for three months past, we have given phosphorus made up after the following formula, which is essentially the same as used by Drs. Anstie, Radcliffe, and others:

R. Phosphori gr. xxxii.  
Pulv. Acaciæ.  
Glycerinæ aa ʒ ss.  
Aquæ ʒ vi.  
Pulv. Ext. Glycyrrhizæ.  
Pulv. Rad. Glycyrrhizæ aa ʒ iss.



Melt the first three ingredients in a closed porcelain vessel, and stir until the phosphorus is finely divided, then add the other ingredients and divide into 960 pills; these are afterwards coated with collodion. The principal thing to be observed is, that the phosphorus be very finely subdivided, so it may not cauterize the walls of the stomach.

One pill was given after each meal, and the respirations, temperature and pulse were taken and carefully recorded three times a day. This record was kept for one month in each case, and the table thus constructed showed the following results: One hour after the pill was given, the temperature was raised from one-half to three-fourths of a degree, and the patient experienced a sensation similar to that of slight alcoholic intoxication. Toward the close of the month in each case, the temperature became more uniform and found its level at ninety-eight and one-half degrees, while, before treatment was begun, it varied from one-half to one and one-half degrees at different hours of the day. The pulse was accelerated from ten to fifteen beats per minute by the same dose, and during the month became more uniform and full, while the sphygmographic trace showed a deeper and less tremulous downward stroke. There was no perceptible change in the respirations.

Frequent examinations of the urine were made before and during the time of administering the drug. As in cases of increased muscular activity, the urea excreted is more abundant, so it was found that in the more acute forms of insanity the daily excretion of phosphorus often reached thirty and thirty-five grains. In the state of dementia following this, the amount was from fifteen to twenty grains daily. The average amount excreted by a healthy adult being about

twenty-two grains, with, of course, slight variations due to changes in diet. These analyses seem important, in showing a direct relation between the amount of wear and tear being sustained by the nervous system, and the amount of phosphorus excreted, and as giving a very good hint to the appropriate treatment.

Upon the administration of the drug to these cases of dementia, the amount of phosphatic matter excreted, uniformly approached the normal standard, and there were marked indications of mental improvement. Large doses, such as one-third to one-half grain seemed only to irritate the stomach and to be carried off by the kidneys, and it was thought best in each case to return to the original small dose.

In three of the fifteen cases under treatment, the stomach became so much deranged that the dose was first lessened and finally stopped altogether. These patients complained of a weight and oppression in the hypogastrium, and sometimes of a burning sensation, after the ingestion of the drug. In two of these cases, both dyspeptic, these symptoms were undoubtedly genuine, while the third complained only after opening a pill, thus discovering the nature of the remedy.

In the doses used it produced no immediate symptoms other than those already mentioned, but the nervous system which had become so impaired or debilitated by the acute attack, through which the patient had so recently passed, slowly manifested increased vigor, and gradually regained its normal condition. This improvement was probably due to the more abundant supply of the phosphatic element supplied to the nerve tissue. Its action upon the nervous system appears equally as striking and definite as that of iron upon the blood.

The experience of Dr. Anstie and others, published

during the past year, "On the Treatment of Neuralgia," &c., by large doses of solid phosphorus, shows that it can be safely administered, which has been fully justified by our own experience. We have observed none of those disagreeable symptoms mentioned by most writers upon the subject, such as albumen, or blood, or casts in the urine, neither jaundice or vomiting. From the literature of the subject as well as our own observation, we are led to believe that the best results have been attained from its use in small doses, and continued for a long time.

A careful clinical record has been kept in all cases where the drug has been used, and we hope in future numbers of the JOURNAL, to present the larger results.

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### HÆMATOMA AURIS.—RECOVERY.

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BY E. H. VAN DEUSEN, M. D.,  
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In a recent number of the *British Medical Journal*, William Teats, M. D., of the Coton Hill Institution, presents, we believe, the first recorded case of complete and permanent recovery in an individual, who had been the subject of marked and unmistakable hæmatoma auris. The case, briefly, was that of a married female, thirty-three years of age, in average good health, admitted to Coton Hill Institution, January 10th, 1870. It was said to be her first attack, and was of three months' duration. She was the subject of acute mania, with strong suicidal and homicidal tendencies; she was destructive and violent, improper in language, and very persistent in her efforts to accomplish self-destruction. The case was regarded as hope-

less, until August, 1872, when the excitement gradually abated, and about the middle of November, she was considered perfectly sane. The details of the history of the case, and of the treatment, which are fully given by Dr. Teats, are introduced by an interesting description of the development of these tumors, with the views of their character as presented by various writers.

In a communication to the same *Journal*, dated, The Asylum, Bootham, York, June 21st, 1873, Dr. Fred. Needham writes:

"I am able to supplement the very interesting paper of Dr. Teats, on 'Hæmatoma Auris,' in your week's issue, by the statement that I have also seen a case of recovery in which this complication existed. A young man was attacked with acute mania, in October, 1861, and came under my care in this asylum, within a week after the attack commenced. For twelve months no improvement took place, but the patient seemed to be rapidly proceeding in the direction of dementia, and for some time there had been hæmatoma of both ears, with the effusion, absorption, and subsequent disfigurement, which mark that peculiarity. A change then suddenly occurred; the excitement passed away, the habits improved, the general mental condition became entirely satisfactory, and the patient was discharged recovered, sixteen months from the date of his admission; and up to this time, a period of more than ten years, he has remained perfectly well.

Unless for the publication of Dr. Teats' paper, it would not have occurred to me to place this case on record; and it is, therefore, not improbable that the superintendents of other asylums have met with similar instances, a report of which would materially affect the prognosis to be taken in cases of insanity where this complication exists. Its striking diminution of late years would seem to point to my definite conclusion as to its general causation. I have certainly found, in my own experience, that its appearance has been materially influenced by the expressed assumption, that it is invariably associated with violence, somehow exercised, and for which some one shall be made responsible."

So far as their nature has been definitely ascertained, there is nothing in the simple occurrence of these peculiar tumors, to preclude the possibility of recovery; at

the same time, physicians experienced in the care and treatment of the insane seem to agree that their presence in any case affects the prognosis very unfavorably. In this connection, the case detailed by Dr. Teats, the second, presented by Dr. Needham, and a third from the records of the Michigan Asylum, are of much interest. The latter condensed from the case-book, is as follows: A young farmer of good constitution, twenty-one years of age, unmarried, was seized with acute mania early in June, 1870, and was admitted as a patient three weeks afterward. The attack, which was attributed to partial "sunstroke," and business responsibility of a perplexing character, was marked by high maniacal excitement and extreme disturbances; in fact, he was brought to the Institution clad in a single garment made from sail-cloth. Persistent destructiveness of clothing and of everything within his reach, and incessant motion, characterized the attack. He was under the charge of special, personal attendants; he was treated with quinine in small doses, followed by bitter tonics, and occasionally received five grains of chloral hydrate at night. Five weeks after admission, well-marked hæmatoma occurred in both ears, passing through the usual stages and terminating in the characteristic disfigurement. In October, there was an abatement of the excitement, convalescence was established and he was discharged recovered, February 15th, 1871. His health has continued good, as has been ascertained by occasional correspondence, and he has been actively engaged in business since his return home.

Dr. Needham regards it as quite probable, "that the superintendents of other asylums have met with similar instances of recovery, a report of which would materially affect the prognosis to be given in cases of insanity where this complication exists." The purpose of this



communication is simply to collect the three cases above detailed, and request for them a place in the JOURNAL OF INSANITY, that they may be brought to the attention of those exclusively engaged in the treatment of mental disorders, in the hope of eliciting reports of other cases of recovery under similar circumstances, if any have occurred.

The general appearance of sanguineous tumors of the external ear, their development, and their characteristic deformity which follows absorption, are too well known to require farther reference. Whatever may be the immediate cause of the effusion, or the precise circumstances determining it, numerous dissections have shown that it takes place between the perichondrium and the cartilage of the ear. The fact of its almost unexceptional restriction to the insane is also generally recognized. During a period of twenty years, about seventy cases have come under my personal observation; and, of all these, with the single exception above reported, not one has even partially recovered. Its occurrence, therefore, can not but be regarded as an unfavorable symptom as far as restoration is concerned.

Although the cause of these tumors is not definitely determined, they are generally and we think correctly, regarded as dependent upon some pathological condition of the brain itself. The conclusion of Dr. Needham, that they are associated with violence, seems scarcely supported by evidence. The fact that they do not occur in general hospitals to which patients are constantly being admitted, who have received severe blows and other violence to the ear, and are not met with under circumstances rendering that organ specially liable to injury, is at variance with such a conclusion. The appearance of the ears of persons, both sane and insane, upon which blows and violence have

been inflicted, does not at all resemble hæmatoma, which is simply an effusion between the perichondrium and the cartilage. Again, they have not occurred to insane persons under treatment in asylums and known to have received blows upon the ear. So far from regarding violence as a cause, careful observation assures me, that if the ear of an insane person has been submitted to any degree of violence, a well-rounded, full and characteristic hæmatoma, like that presented as an illustration to Dr. Hun's admirable article on this subject is impossible. Contusions and ecchymoses destroy the symmetry of the tumor, as well as the perfect tracery of the minute vessels, usually observed for several hours previous to the dull, dusky hue assumed at a later period.

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## CLINICAL OBSERVATIONS ON THE DEMEN- TIA AND THE HEMIPLEGIA OF SYPHILIS.

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BY M. H. HENRY, M. D.,

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I contribute the two following cases of disease of the brain because they illustrate, beyond any possibility of doubt, their origin in syphilis. There is a growing tendency to attribute to syphilis obscure diseases of the brain or nerve centers, for no other or better reasons than that they are obscure, that the patient at some period of his life has had venereal disease, or that he has been benefited more or less by the use of the iodide of potassium.

The visceral lesions of syphilis have not yet been studied and observed with the same exactness and

discrimination as shown in many other departments of medicine; nor has there, until recently, been displayed any earnest effort to throw light on this branch of medicine on the part of those whose opportunities have been ample for special observation. In the present state of our knowledge of the phenomena of syphilis involving the brain, I think very little will be gained by any attempt to draw conclusions in support of any theory or system of practice. What are most wanted now, and what will best serve to bring order out of the chaos of ideas that are afloat regarding the etiology and pathology of brain syphilis, are good, honest, painstaking clinical observers. When, by and by, the results of such labor are collected and massed, we may be in a position to offer propositions that will serve a useful and scientific purpose.

Most of the authors who have made any special observations, and written on the disturbances of the intellect due to syphilis, have spoken of the lesion under the generic term of mental alienation. By Dementia\* is generally understood "that condition in which weakness of intellect, induced by accident or age, is the prominent feature—mind altogether feeble; ideas confused, vague, wandering; memory much impaired. Patients ignorant of time, place, quantity, property, etc.; forget immediately what they have just seen or heard. Manners undecided, childish, and silly. The demented have neither affections nor aversions, nor care for anything. Paroxysms of restlessness and excitement. Little or no control over bladder and rectum." With this view I have selected the term dementia because it conveys, I think, a more correct idea of the intellectual condition of the patients whose cases I have to relate.

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\* *Index of Diseases*, Tanner, p. 144.

CASE I.—Mr. —, a gentleman residing in New York, twenty-five years of age, of good size, and apparently in good general condition, consulted me on the 25th of September, 1868. He was suffering at the time from a severe pustular syphilide, mainly about the forehead and face, as well as from mucous patches about the tongue and fauces. In the early part of May, 1868, he contracted a chancre, which, according to his own statement, did not make its appearance until five weeks after coitus. He consulted a surgeon of this city, who treated the sore very lightly, assuring him that it would be all healed in a few days, and he would have no further trouble with it. Up to this time he had been in excellent health, living a great portion of the year in the country. The chancre did not heal rapidly, and he suffered from constitutional disturbance and mental anxiety. About the middle of August, 1868, he noticed a rash all over his body, and being annoyed with his medical attendant, he decided not to pursue any treatment. In the course of two weeks this disappeared, but was followed, about two weeks after, by the pustular eruption and sore throat. He was placed on a mercurial course of treatment, taking half a grain of the proto-iodide of mercury with one grain of the extract of hyoscyamus, morning and evening, and his throat treated with a strong solution of nitrate of silver in the form of spray. Under this treatment his throat soon improved and the pustular eruption disappeared. He spent the winter of 1868-1869, in Texas, and enjoyed excellent health. I saw nothing more of him until July 11th, 1869, when he complained of an irritable condition of his throat and fauces. He was suffering from a slight attack of laryngitis, which yielded to a mild course of treatment. Being an excessive smoker, I forbade the use of tobacco, and he soon got quite well. In the early part of the following December he called on me, and was apparently in splendid condition. A few days after he sailed for Cuba, where he intended to spend the winter with some friends. He remained on the island until May 22d, 1870, when he sailed for Southampton. In all his letters to his friends in New York he wrote that he was enjoying perfect health. Those who were with him at this time confirm his statements. He wrote to his father on some business matters the day that he sailed, and was perfectly well. He arrived at Southampton on the morning of June 6th, took the train to London, and went directly to his sister's house.

Dr. Edward Meryon, of London, was called to see him, and furnished the following account of the case while under his care:

"Mr. — arrived in London, from Cuba, on Monday, the 6th of June, and I was summoned to him on the morning of Wednesday, the 8th, in consequence of mental incoherence, of which he was then the subject.

"He complained of no pain, and all that could be elicited from him was, that 'he had had a cold and comfortless voyage; that he had kept himself very much to his cabin; that his bowels had been confined for well nigh a month, but that he had been very well.' His latter assertion was so far confirmed by a dispatch from the captain of the ship, as that he had not been under medical care during the voyage, but that on landing at Southampton he excited notice by not answering questions.

"From letters which he wrote immediately before sailing, and from the observation of Mr. R. F., there can be no doubt that he was quite well when he left Cuba.

"He managed to find his way to his sister's house in London, which, I think, he would scarcely have been able to do when I first saw him. He was then in a state of restless stupor, with a hot skin, quick, weak pulse, injected conjunctivæ, widely dilated pupils, not readily answering to light, and he was very deaf.

"Supposing that the obviously congested brain and disturbed circulation might, in some degree, depend on a mechanical cause from accumulated feces, I gave him a brisk calomel purge, and ordered a mustard poultice to be applied to the nape of the neck.

"On Thursday, the 9th, the bowels were thoroughly emptied, and the pupils contracted more to the influence of light, but the disturbed intellect continued the same; he was incessantly intent on going out—on one occasion with a purpose—to his tailor, but generally with a vague current of ideas, and he was very impatient of control, or of being followed or accompanied.

"On Friday, the 10th, in consultation with Dr. Burrows, notwithstanding the averment of a cold voyage, we concluded that he must have had sunstroke. All the cerebral symptoms were unchanged, and we decided on repeating the calomel purgative pills, and on applying a large blister to the nape of the neck.

"On Saturday, the 11th, the pills acted thoroughly, and the blister rose well, but every symptom remained unchanged. In consequence of wakefulness, we gave him a third of a grain of the hydrochlorate of morphia at bedtime.

"Sunday, the 12th.—The morphia had little or no effect—his mind still wandering, and in the same restless spirit. I ordered a draught containing 3 i. of the hydrate of chloral, to be taken at night.



"Monday, the 13th.—Had a little sleep, but not much; bowels acted spontaneously. Ordered ʒ ss. of chloral at bedtime.

"Tuesday, the 14th.—Slept all night, and during the greater part of the day. In the morning he complained of being cold, and his feet and legs were felt to be cold. His mind became suddenly quiescent. From being constantly restless he became suddenly impassive; his sense of hearing manifestly improved, but the mind still continued incoherent, although he often answered questions correctly.

"Wednesday, the 15th.—I ordered ʒ i. of the syrup of the hypophosphite of iron three times a day.

"On the 16th, he had an evacuation from the bowels, which he passed unconsciously in bed, and the urine also passed in bed, apparently unconsciously.

"On the 17th, I added five minims of the liq. strychnine (one twenty-fifth of a grain) to be taken with each dose of the syrup; but it appeared to give a propulsive power to the muscular coat of the large intestines without affecting the sphincter muscles, for on Saturday, the 19th, he passed three evacuations in bed. I therefore withdrew the strychnia from the syrup, after which the bowels continued quiet until Wednesday, when they again emptied themselves under the influence of two doses of the liq. strychnine; and again on Saturday, the 25th, with one dose.

"During all this time the mind continued in about the same state—one day appearing to be improved, another the reverse;—so much so, that Dr. Burrows, who had not the advantage of watching him daily, declared, on the 30th, that an extensive part of the brain must be disorganized; and on Sunday, (July 3d,) he fancied that there might be only effusion into the ventricles, and that absorption might be affected.

"On Monday, the 6th of July, Dr. Smith, of New York, thoroughly examined him, bodily and mentally, but, alas! could throw no new light on the case.

"From the 7th (July) we have added seven grains of the iodide of potassium to two of the doses of the syrup daily—the third dose of the syrup is given alone—but with no marked alleviation of symptoms; the iodide to be discontinued during the voyage home.

"From all that I have been able to observe, and from the persistence of the mental phenomena, I have arrived at the conclusion that there is structural change in the cerebral substance round about the optic thalami, extending towards the surface of the

cerebrum, and close upon the tractus opticus, for every now and then the sight is obviously affected. Were there disease more in front, and implicating the corpora striata, motion would doubtless be affected. If in the cerebellum, either there would be loss of co-ordination of muscular motion or some disturbance of the genital organs, or sickness, of which none exist. If about the crura cerebri, the muscles of the eyes would be affected. If in or about the pons varolii, some facial disturbance would present itself; and if in the medulla oblongata, some affection of speech, deglutition, or respiration. That one portion of the brain which I have named remains.

"July 26th.—The day after my report of Mr. — was written, I observed such a manifest improvement that, although a cabin was secured for his voyage to America, I advised a postponement of his return for a short time, lest any unavoidable disturbance should interfere with the process of repair which appeared to have commenced. Since that time the change for the better has been continuously progressing; and although the consciousness of water existing in the bladder, and of excrementitious matter in the bowels is still defective, yet are there indications that such consciousness is returning, and the mental faculties are obviously improved. Under such circumstances I can only suppose that there has been effusion into the lateral ventricles of the brain, that the optic thalami, the hippocampi majores, and the surrounding brain substance have suffered from pressure, and that the process of absorption is gradually going on. Such pressure will account for all the symptoms which have occurred, and the improvement justifies the hope that the brain is clearing itself, and that, eventually, Mr. — may regain his former healthy condition."

For two weeks before leaving England he was able to dress and sit up all day. He went regularly to his meals and was able to assist himself at the table. He walked, and rode, and even made the journey to Liverpool without any inconvenience. On the 27th of July he sailed for New York. During the voyage he seemed to improve daily, both bodily and mentally. He arrived in New York on the 8th of August. The improvement seemed to continue until about the 1st of September. During the greater part of August he rode and walked every day, played billiards and cards, and enjoyed his food. His exact condition in the latter part of August, as far as I learn from his father, was this:—"He was not entirely steady on his legs. His memory was weak and imperfect. At times he was quite incoherent. His sight was so

imperfect that he could not read." About the 1st of September he began to fail badly, and in a few days became so helpless that he was forced to remain in bed. From about the 20th of July until the 4th of September, with one or two exceptions, he had not had any involuntary passages from the bowels or bladder. At this time my friend Dr. D. Tilden Brown was called to see the patient, and on hearing the history of the case suggested that I should be consulted.

On the 4th of September I first saw him after his return from Europe. Although I had known him very well indeed, he did not recognize me. In response to my questions he answered incoherently and foreign to my interrogatory. He seemed to have lost his mind entirely. He stood up with great difficulty, and as he attempted to walk his knees gave way, and he swayed from one side to the other. He showed a fear of falling, and only maintained the erect posture with a great effort. As he stepped forward he was unable to lift his feet, he dragged them along. He was as stout as when I saw him last, but his flesh was "flabby." There was paralysis of the whole of the right side of the face, with considerable distortion. The right cheek bulged out, and the mouth was constantly open; the tongue turned to the right and hung forward. There was mydriasis of both eyes. The left pupil responded to the influence of light; the right did not in the slightest degree. There was paralysis of right oculo-motoris nerve, with complete ptosis of the right eyelid. His appetite was bad, and deglutition very imperfect. He retained food in his mouth for hours; although unable to swallow, it did not occur to him to remove it from his mouth. His sight was very bad, he could not read or even tell the letters of large print. His whole look and manner gave the impression that he had entirely lost his mind, in fact suffering from all the symptoms and many indescribable features that are known to syphilographers in the term *l'hébétude*. He was at this time in the habit of passing his feces and voiding his urine involuntarily. I ordered a generous diet, a little wine, and thirty grains of the iodide of potassium to be given three times during the day, and thirty grains of the bromide of potassium to be given at bedtime. I also insisted on the necessity of the greatest care of his person and general wants.

On September 6th there was not the slightest change in his condition. Increased the amount of potassium to four thirty-grain doses daily. Continued the bromide at night.

September 7th.—There seemed to be a little less paralysis of

the face and less fall of the right eyelid. His speech and articulation was a little better.

September 8th.—Was a little better; still voiding his urine involuntarily. On examination found it 1023; no albumen.

September 9th.—Dr. W. H. Van Buren saw the case with me, and it was agreed to increase the amount of iodide of potassium to five doses daily. His appetite was improved, and he slept much better.

September 11th.—The only noticeable change was that he was a little more cheerful. Since he slept well I discontinued the bromide of potassium at night, and added another dose of the iodide—making one hundred and eighty grains of the potassium daily in six doses.

September 12th.—He complained of a little difficulty in digesting his food. Ordered five grains of pepsine and five grains of bismuth before each meal.

September 13th.—Much better in general appearance. Face decidedly improved. Eats well and sleeps well. Digestion much better.

September 14th.—Still improving. Answered questions more intelligently; conversed in the morning with comparative ease. Has no control over the bladder. Sleeps well and eats well. No ill effects of any kind from the use of the iodide of potassium. Increased the amount to seven doses—making two hundred and fifty grains daily.

September 17th.—Facial paralysis much less. Less deformity about the mouth. Improved in intelligence. General condition much better. Ordered the medicine to be taken every two hours—taking two hundred and fifty grains of the iodide daily.

September 20th.—Sits up all day. Has no control over the bladder. In general appearance is much improved. Answered questions more intelligently than he had done for some months. Taking two hundred and eighty grains of the iodide of potassium daily.

September 21st.—Went out for a ride. Treatment continued.

September 26th.—Very much improved, mentally and physically. Rides out every day. Walks better. Can read slowly. Mydriasis of left eye entirely disappeared. Right eye a little better. Treatment continued. Examination of urine showed slight deposit of crystals of oxalate of lime, Spec. grav. 1020.

October 3d.—There being little or no improvement during the last three days, and as he showed great tolerance of the iodide, I

increased it so that he is taking three hundred grains daily. From this time until October 19th he was gradually improving. Walks out every day. Eats well and sleeps well. Reads better, and sits up in the evening, and plays cards, such as whist and cribbage, well. Has control over his bladder, and shows a great improvement in his general intelligence. His sight being still very much impaired, (October 19th,) my friend Dr. H. D. Noyes was kind enough to see him with me, and the following is the result of his examination:

"There is divergent strabismus, but the attempt to investigate the condition of the muscles with any care is impossible, on account of the great amblyopia and the clouded state of his mind. He answers questions very slowly, and his apprehension is extremely limited. His face is pale and has a vacant expression.

"The right pupil is slightly dilated, but contracts when the eyes attempt to converge. The left pupil normal.

"Vision in each eye  $\frac{20}{200}$ . Reads Snellen 5 at eight inches. Visual fields could not be defined. Color perception not tested.

"By ophthalmoscope, right eye; media clear, emmetropia; optic nerve unnaturally white, border sharply defined, and heavily marked with pigment; its tissue opaque; its surface not elevated; veins large, arteries of usual size; deficiency of small vessels.

"The retina exhibits a glistening, clouded infiltration, which makes it appear like watered silk. The exudation occupies the depth of the membrane, and extends over all the central portions of eye-ground. There are no apoplexies nor spots of exudation.

"In the left eye the media are clear and refraction emmetropic. The optic nerve is congested, looks as much too red as the other optic nerve too white. Arteries and veins are of the usual size and appearance; the retina hazy and infiltrated as in the other eye.

"The lesion in this case is evidently neuro-retinitis, and the appearances favor the presumption of a process coming down from the brain by continuity of tissue, not the occurrence of strangulation of the head of the optic nerves from pressure on the return circulation. The absence of decided elevation, and the sharp limitation of the right optic disc, are arguments for this opinion. In the right nerve the acute inflammatory stage had passed, and there remain the connective tissue and atrophic degeneration of nerve-fibres. This would imply that the left eye was attacked after the right, or may have been more severely inflamed, because in it the symptoms of hyperæmia are decided. The lesions seen by the



ophthalmoscope stand in full accord with the other symptoms, indicating serious brain trouble."

October 24th.—Sight very much improved. Can read the large print of newspapers tolerably well. Walks much better, and when standing is much steadier in his knees; related plainly and without hesitancy what he had done the day before. Still suffers from incontinence of urine.

October 28th.—Improving daily. Looks decidedly better. General perceptive qualities much more acute. Can walk half a mile without fatigue. Memory much better. Converses rationally on ordinary topics. Realizes his condition perfectly. His appetite is good. Has no desire to sleep during the day, but sleeps well during the night. Continues to take the full amount of the iodide of potassium daily (300 grains,) as well as the quinine and iron.

November 1st.—Gaining in strength. Treatment continued.

November 4th.—Called at my office; looks very well. Has lost almost entirely that dull vacant look. Memory still improving. General intelligence steadily returning. Walks a mile without fatigue. From this time he went on gradually improving; he spoke of his visit to Havana being like a dream. In the early part of January, 1871, he took very little of the iodide of potassium, and in February discontinued it entirely. In March he was, to use his own words, quite himself again, with this exception—his sight was still imperfect. He is able to walk to his father's office every morning, a distance of three miles, and walk up in the evening without feeling fatigue.

During the summer he spent a portion of his time in the country, and returned to the city, apparently as well as ever, November, 1871. The only difficulty from which he now suffered being his visual power and capacity, I again called on my friend Dr. Noyes, and availed myself of his skill and experience. The following is the result of his examination:—

"November 24th, 1871.—Mr. — examined again. The right pupil which was formerly dilated, is now of normal size and behavior, while the left pupil is enlarged, although contractile. The movements of the globes are normal; does not have diplopia. Vision in each eye  $\frac{2}{3}$ . Reads Snellen  $1\frac{1}{2}$  at 5 inches, with each eye or with both.

"To the ophthalmoscope the right nerve appears pale and bluish white; edges a little indistinct; very deficient in small vessels. Arteries small, veins large, no pulsation. Left optic nerve, which thirteen months ago was congested, is now of a bluish white color,

its border strongly defined and pigmented; has neither elevation nor depression. The small vessels in horizontal meridian very few. The adjacent retina clear, except above nerve is a glistening streak of connective tissue, and at the macula the retina has a glistening bluish or steel-colored reflex, as if due to connective tissue formation.

"The optic nerves, it is thus seen, have passed through the period of active inflammatory congestion to the state of white atrophy. Much of the nerve-tissue has survived the ordeal, and being now relieved of the inflammatory hyperæmia and accompanying infiltration, vision has advanced from  $\frac{1}{10}$  to  $\frac{3}{7}$ ."

Before making any remarks on the case that I have just related, it may, perhaps, be well to state that I heard of the condition of the patient, when in London, the day that his father sailed from New York to join him. Knowing that the father was not aware of the syphilitic history of the patient, I communicated the fact to him, and asked him to tell the physicians in London the general nature of the attack. Dr. Charles D. Smith, who was a fellow-passenger, visited the patient, and mentioned what I had said. After they had failed to discover any external evidence of his having suffered from syphilis, it was decided, "since it could do no harm," to give small doses of the iodide of potassium, five grains of which were administered three times daily. While the patient showed little or no improvement under the expectant and tonic treatment, under use of even this small quantity of the iodide of potassium a marked change for the better was soon manifested. On taking all the symptoms into consideration, I was led, and still believe that there was extensive and diffused gummy deposit within the arachnoid at the base of the brain, but mainly on the right side. From my own experience I am satisfied that, if larger quantities had been given at this time, the patient would have been spared the attack which

followed his arrival in New York. I believe the older the syphilitic deposit, the greater the necessity for the exhibition of an increased amount of the iodide. I have been somewhat surprised to find that, even at this time, there appears to be some fear shown by our friends on the other side of the Atlantic of the use of the large doses such as we are in the habit of using in this country, and this, too, since Sir Henry Thompson\* published his own excellent conclusions. To derive the full benefit of the iodide where there is a large amount of gummy deposit, or any of the inveterate and intractable forms of the disease in the tertiary period, it must be given in large doses—indeed, I scarcely know the limit. Little fear need be entertained about producing iodism. I have never seen it in a person suffering from tertiary syphilis. In this case the patient took three hundred grains daily for more than eight weeks, and with the disappearance of the syphilitic symptoms, he gained steadily in his general health and in flesh. To obtain the best results in the use of the iodide, it should be taken thoroughly diluted—each dose in a small glass of water. If there is any nausea, a little compound tincture of bark, or an infusion of columbo, may be added. The drug is more readily and perfectly absorbed when taken in this way than when taken with only a small quantity of fluid.

The history of the case illustrates the syphilitic character of the disease. Following the constitutional manifestations, there were cerebral disturbance, indicated by mental derangement, incoherency, loss of memory; paralysis of third pair, shown by ptosis, external strabismus, mydriasis; paralysis of sphincters; loss of sight and marked lesions, revealed by the ophthalmoscope. The tertiary manifestations occurred two years after

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\* *Lancet*, December 28, 1867.

infection. In forming a diagnosis of the case, I, of course, excluded sunstroke, alcoholic poisoning, or mild uremic poisoning, from the list of probable causes. In the first instance, the patient was not exposed to the sun, and the history of his attack is entirely opposed to any such conclusion. In the second instance, the patient was an exceedingly temperate man, and there was not the slightest indication of any delirium, or of any hallucinations, or of the prostration invariably associated with attacks of cerebral congestion following alcoholic excesses. The examination of the urine failed to detect any casts, and the entire absence of any puffiness of the face, or other dropsical effusion, dispelled the idea of a mild uremic poisoning.

CASE II.—Mr. —, aged 45, consulted me first June 26, 1868. He gives the following history of his case: "Four years ago I contracted a chancre, and was attended by Dr. —, of this city. It was very difficult, indeed, to heal up the ulcer. I had two buboes which suppurated. Up to that time I enjoyed excellent health. When my medical attendant found that it was difficult to heal the ulcer, he placed me under a mercurial course of treatment, which was kept until my gums were very much affected. About the time the buboes commenced to heal, so that I could get about, a rash appeared over my whole body. Some time after this I had another eruption, which he told me was a pustular form of the disease. I was under his care for this last eruption nearly six months. The ulcers were very obstinate, constantly recurring. At this time I took the iodide of potassium with syrup of sarsaparilla. I continued this treatment for some months. From that time until last fall (Nov. 1867) I was very careful not to expose myself to cold or any dissipation, and I managed to get along. I never felt perfectly well from the time I contracted the disease. It is very possible my mind has something to do with my distress, but I certainly never felt like myself after the disease manifested itself."

I have given thus far the history of his case in his own words. At the time he called on me he was suffering severely from the want of rest, and the irritation caused by the rupial ulcers, that literally covered his legs, feet, and portion of his arms. Both tibiæ showed large nodes, and he complained of severe neuralgic

pains about the head and neck that increased at night. Although of good frame, and apparently well nourished, he was weak, and showed unmistakable evidence of an inveterate syphilitic cachexia. I placed him under the following treatment : Twenty grains of the iodide of potassium to be taken three times daily in an infusion of columbo, and five grains of the citrate of quinine and iron to be taken before each meal. Forty drops of McMunn's elixir of opium to be taken at bedtime, and the strictest care taken to cleanse the ulcers morning and evening, dressing them with a little simple cerate after being sponged with a weak solution of the chloride of sodium. Under this treatment he showed, in the course of ten days, much improvement. His appetite was improved. He slept better, and the ulcers showed a better tendency to heal than they had done for some months.

July 12 (1868).—Very much improved. Finds it still necessary to use the opium at bedtime. Increased the iodide of potassium to four scruples daily.

July 24.—Not much better than when last seen. Increased the iodide of potassium to five scruples daily.

August 3d.—Much improved. The ulcers healing well, and bearing altogether a much healthier aspect than they have done since he has been under my care. Eats well and sleeps well, having discontinued the use of opium at bedtime. The iodide of potassium and other general treatment continued.

September 1st.—Had continued the general treatment, and was improved in every particular. The ulcers had all healed up, and the cicatrices bore a good aspect. The nodes over the tibiae had almost entirely disappeared. The quinine and iron was discontinued, and cod-liver oil ordered. One hundred grains of the iodide of potassium was still taken daily in five parts.

October 5th—Feeling so well he had discontinued the use of the medicines for about ten days, and indulged freely in the use of spirituous liquors. When I saw him he was suffering from an attack of influenza and severe pains in all his bones and joints. New ulcers had appeared on his legs, and the good that had been accomplished during the past three months was entirely overcome by his dissipation and excesses of the last ten days. With appropriate treatment, good nursing, and a generous diet he soon recovered; but the ulcers were slow to heal. The treatment was continued. From this time he remained under my care until January, 1869. He was then doing well. During the year 1869 I attended him at intervals; but he had become very dissipated, and seldom



followed any systematic course of treatment. I did not see him in 1870 until the 28th of April, when I went to him in Brooklyn. While visiting some friends he was taken suddenly ill, and becoming alarmed from his manner and loss of mind, I was sent for. I found him very much emaciated, with stupid expression of face, a difficulty in articulating his words, an entire loss of memory, and when addressed answered in a rambling and incoherent manner. Experienced a difficulty in raising his feet from the ground or maintaining the erect position. The functions were performed without any difficulty. I ordered the use of iodide of potassium, one scruple to be taken four times daily, and increased to five or six times if he did not show improvement within one week. He was placed on a generous diet, with wine or milk punch. In one week he was so much improved that he went West, and there spent the summer.

On his return in October, he was very much improved in appearance, and promised to do well. He attended to his business, and seemed to be better off in every way than he had been for a long time. I did not attend him again until June 8, 1871. I was called to see him in the evening of that day, in consultation with Dr. Steele. From the doctor I learned that the night previous he had been drinking perhaps a little more than usual, although for some weeks before he had been very dissipated. He fell asleep on a lounge in the office of the hotel where he lived. About midnight his friends awoke him and insisted on his going to bed. In making the effort to raise him up it was found that he was paralyzed on the right side, spoke but little, and then in an incoherent and rambling manner. He was placed in bed, when he soon fell into a heavy sleep which lasted for some hours. In the morning he spoke very indistinctly and with much difficulty. When I saw him in the evening no change had taken place; the whole right side of his face and extremities were paralyzed; there was ptosis of right eyelid, mydriasis, and divergent strabismus. There was no fever; temperature good. He was carefully nursed; his general wants strictly attended. He was ordered a diet of beef tea, weak milk punch, Vichy, and a scruple of the iodide of potassium to be taken every five hours in a glass of water.

June 9th.—No change in his condition; lies in an apathetic state; takes food and medicine; when spoken to answers with difficulty in an imperfect and rambling way. Ordered the iodide of potassium to be given every four hours.

June 10th.—No change of any consequence; slept fairly during

the night; pulse good; had a movement from the bowels this morning; voids his urine (when told by the nurse) three or four times daily. Treatment continued.

June 11th.—Does not appear as well to-day; has grown more feeble.

June 12th.—Lies in a dozing condition; seldom moves, or attempts to utter a word, unless addressed by his attendant. Treatment continued.

June 13th.—Entirely unconscious; breathing normal; pulse 86; voided his urine this morning involuntarily; swallows with great difficulty.

June 14th.—No change, with this exception—his breathing is somewhat heavier and faster; respiration about 38 in the minute.

June 15th (morning).—Lying in a comatose condition; respiration 40 in the minute. At ten in the evening he died.

POST MORTEM EXAMINATION.—June 16th, 1871.—The body having been placed on ice, a post-mortem examination was made fifteen hours after death. In this I was assisted by my friends, Drs. Briddon and R. W. Taylor. Rigor mortis well developed; upon the body are numerous cicatrices of syphilitic ulcers. Upon opening the head, found a gummy tumor of the integument of the scalp; upon each frontal bone were numerous minute bones, the results of previous inflammation which had not involved the dura mater. The convex surface of the brain appeared normal, but upon its under surface, including that portion which is situated in the middle cerebral fossa, the arachnoid was greatly thickened, and of a dirty chocolate color. This same appearance was seen slightly upon the lateral surface of the left side, but the condition was not as far advanced. Upon opening the fissure of Sylvius found a gummy tumor as large as a pea, which completely encircled the middle cerebral artery, and was prolonged in filaments over other minute arteries which sprang from the main trunk. The tumor was firm in consistence, and was attached by its outer surface to the brain-tissue on each side of it. The caliber of the artery was somewhat narrowed, and those springing from it were compressed to occlusion.

The heart, lungs, liver, spleen, and kidneys were examined, but showed no marked or appreciable pathological change.

THE MICROSCOPICAL EXAMINATION of the tumor was made by Dr. Taylor, and found to consist of round cells, some having nuclei, others no nuclei, but granular contents. They were of a diameter of about  $\frac{1}{2000}$  of an inch. Mingled among these cells

over the field was a large quantity of granular and fatty detritus, and here and there a few fusiform connective-tissue cells. These round cells were not as well defined as those of gummy tumors of the skin, but they preserved their contour much better than the cells of gummy tumors of the liver. The nuclei were present in about half the whole number, and were not of uniform size; in some they were about  $\frac{1}{5000}$  of an inch, in others about  $\frac{1}{8000}$  of an inch. The outer coat of the middle cerebral artery was rendered indistinct by this cellular deposit, which, however, had not invaded the middle or the inner coats. \* The portion of the tumor which was nearest the artery was composed mostly of these cells with some fibres of connective tissue; whereas portions taken from the periphery of the tumor were composed almost wholly of granular and fatty débris. The cortical portion of the brain in the immediate vicinity of the tumor, and slightly beyond it, was soft and readily broken down, and, under the microscope, was found to be composed of granular molecules.

In this case there were many features of the attack that might easily have led to the belief that it was a case either of ordinary cerebral hemorrhage, or of serious apoplexy, and had I not known the history of the patient, there were many circumstances connected with both attacks which might have induced me to look to other causes than the syphilitic lesion for a solution of the problem of his disease. The post mortem examination, however, in connection with the previous history of the patient, tells so plainly that syphilis was the cause, that it is scarcely necessary to seek further for an explanation.

It may possibly be urged that the mental phenomena in the last attack were due to cerebral congestion, brought on by the patient's dissipation, and not to the syphilitic disease. But the only manner in which I can explain the sudden development of the other symptoms which were observed in the last attack, and resulted in his death, is, that the gummy tumor became the seat of active inflammation, and, pressing upon and

around the yielding artery, caused its occlusion, and in that way cut off the supply of blood from the portion of the brain supplied by that artery. The active inflammation, I should judge, was excited by his recent excesses in the use of alcoholic stimulants.

In this case the first recognized attack of the disease in the brain occurred six years after the infection, and I think it very probable that, had he been a temperate man and pursued a judicious course of treatment, we should not have had the results I have related of the post mortem examination which followed the second attack, seven years after infection.

The hemiplegia was marked by the same characteristics as described by authors who have specially observed the disease.—*American Journal of Syphilography and Dermatology.*

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## BIBLIOGRAPHICAL.

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### REPORTS OF AMERICAN ASYLUMS FOR 1873.

MASSACHUSETTS. *Twentieth Annual Report of the State Lunatic Hospital at Taunton:* 1873. Dr. W. W. GODDING.

There were in the Hospital, at date of last report, 414 patients. Admitted since, 431. Total, 845. Discharged recovered, 81. Improved, 188. Unimproved, 89. Died, 53. Total, 411. Remaining under treatment, 434.

This Institution originally intended for 250 patients has, for some years, been crowded with an average of 400, and during a portion of the past year of 450 patients. The Legislature at their last session made an appropriation of \$125,000, for the erection of two wings,

one on either side of the present building. This work has been pushed forward with vigor and economy, and early in the present year, the wing for men will be opened. It is of three stories, and built to correspond in architecture with the original building to which it forms an extension. It is free from ornamentation, and strict regard has been paid to durability and thoroughness of construction. Each floor will contain about thirty patients in single rooms, and the requisite number of attendants. In connection with each new ward is a large room, with the necessary service rooms, to be used for the sick, where patients can be visited and attended by friends. These rooms are of easy access, without passing through the general ward. In the addition great attention has been paid to securing an abundance of sunlight, and free ventilation, as also to immunity from danger from fire. The foundations for the women's wing have been laid, and the structure will be completed as soon as possible. A new engine house has been erected, with provision for five new boilers, a fan room, engine room, and shop for machinist on the first floor, and a shop for general uses in the second story. New pumps and water tanks have also been placed in position, which, it is thought, will furnish the amount of water necessary for all the uses of the Hospital. Other improvements have been made which add to the efficiency of the various departments.

The Doctor makes a final appeal regarding the provision for the convict insane. As before, he advocates, as the best measure, the erection of a separate institution, and this failing, the erection within the enclosed ground of the new prison, of a comfortable hospital building for their care and custody. This is the general plan adopted in the State of New York several



years ago, and has the merit of being a success. Another plan discussed is, the putting up of such a building in connection with one of the existing asylums, a project, which meets with no favor with any of the hospital governments. From the quotation from the Board of State Charities, it would seem that the Taunton Asylum, in view of the extensive additions being made, stands a fair chance of being selected to accommodate the convict insane.

The Doctor then discusses in a very interesting manner the three questions: "Are a considerable number of, or are any sane persons forcibly detained in hospitals?" "Are those who are insane generally abused there?" "Are our hospitals doing everything for those under their care that could reasonably be expected of them?" We quote a portion of his remarks upon the subject of abuse:

"About the alleged abuse of patients, while human nature is what it is, we must expect now and then to get unsuitable persons as attendants, and it is too much to hope that nobody suffers at their hands before their character is known. I can only say that after that they do not remain. It is a very trying place, that of attendant on the insane, and the man or woman who faithfully and patiently labors in that capacity, kindly caring for the helpless, the violent, the unthankful, has certainly an admirable opportunity to cultivate all of the christian graces, and if they miss their reward in this world I hope they may find it in the next. 'With what measure ye mete, it shall be measured to you again.' Friends tire of their endless care and bring their patient to the hospital. The public expects these attendants never to grow weary, not to hear the oath or the obscene word, or to mind the blow or the stinging taunt; but they do, for they are human like ourselves. I only expect them to remember that the patients, being insane, are not responsible for what they do, and that they are not to notice what is said, to care for them as children, and that the golden rule is worth whole pages of by-laws. The public have very little conception of what the insane really are, or of the difficulties in the way of a proper care of them. Man reverts very

fast to the animal when you take away his mind. The natural impulse to throw a screen over all this is eminently proper and I shall not be the one to lift it. I only ask that the fact shall not be overlooked in judging of the situation."

MASSACHUSETTS. *Eighteenth Annual Report of the State Lunatic Hospital at Northampton*: 1873. Dr. PLINY EARLE.

There were in the Hospital, at date of last report, 433 patients. Admitted since, 181. Total, 614. Discharged recovered, 48. Improved, 59. Unimproved, 52. Not insane, 1. Died, 21. Total, 181. Remaining under treatment, 433.

Dr. Earle, as in years preceding, devotes considerable attention to the subject of moral treatment, and gives in detail the various assemblages of patients and the record of their labor. Only twenty-four evenings of the year passed without some general congregating of the patients. As showing among other things the economy of such assemblages, the Doctor states, "that as a rule, the lights in the halls are extinguished, and those in the offices are turned down; every patient who is not in bed is expected to be at the gathering, and probably on three-fourths of the evenings, when those officers are all at home and well, the Superintendent, both of the Assistant Physicians, and the Clerk are present." From the Doctor's statement, it would seem that all must either "fish or cut bait"; either attend these gatherings or go to bed. This may all be well, but it would seem that attendance thus compulsory, would be looked upon as a labor, by both officers and patients, rather than in the light of amusement or recreation. The new airing courts have been found to be of great value in enabling a larger number of the patients to enjoy the advantage of outdoor air and exercise, and it is recorded as a remarkable fact, though an experiment merely, that on one occasion all but about ten per

cent. of the patients were out of doors. Though comparisons are odious, we would simply say, for many years in the Asylum at Utica, the number of men patients on the wards during pleasant weather has not averaged more than three per cent., and at times has been only one per cent.

Dr. Earle makes a strong appeal for the establishment of an asylum for the convict insane, in connection with the new prison, to be under the charge of the Physician to the prison. The Superintendents of the three State Hospitals united in a memorial to the Legislature to this effect, which, we hope, will be the means of accomplishing so desirable an object.

NEW YORK. *Annual Report of the Kings County Lunatic Asylum*: 1873. Dr. E. R. CHAPIN.

There were in the Asylum, at date of last report, 684 patients. Admitted since, 322. Total, 1,006. Discharged recovered, 112. Improved, 71. Unimproved, 39. Died, 66. Total, 288. Remaining under treatment, 718.

Regarding the character of cases admitted, Dr. Chapin makes some remarks which so closely agree with the experience of others, that we quote in full:

"Among the patients admitted in recent years there has been a growing disproportion of old and decrepid persons, as to some of whom there seemed to us insufficient mental obliquity to prevent their more properly passing their few remaining years, at most, in the bosom of their respective families. While we appreciate the compliment inferentially paid us by the friends in intrusting these old people to our tender care, nevertheless it is discouraging to find our new wards, so well adapted as they are to the treatment of the recent insane, becoming curtailed as to their usefulness in this regard, by being largely occupied with a class for whom no cure can be expected.

He treats of some of the popular fallacies in regard to the insane, and first, of the belief which is enter-

tained by many, and which so often operates to the detriment of those who have recovered, that those who have been insane never become perfectly sound in mind again, or, at least, are so liable to a return of the disorder that they can never be relied on with the same confidence as before. This idea he pronounces unjust and even cruel, as it certainly is erroneous. Another popular fallacy is noticed in the belief, entertained by some, that sane people may easily be thrust into and kept in an asylum, for an indefinite period. It is an error to suppose that because patients are occasionally released from asylums by the courts, they are wrongfully committed to them or detained therein. In some of these cases the patients are convalescent, and would soon be discharged; again, patients who are unquestionably of unsound mind are released by judicial proceedings, under the representation that they would no longer be liable to endanger their own or others' lives or property. He speaks of the early period of improvement in many cases, when before they can comprehend the reason of their confinement, they importune friends, visitors and others, either personally, or by letter clandestinely sent out, for their release, and very aptly characterizes this as the *habeas corpus* era of their history. He calls attention to the fact that many who are coherent in speech and correct in their deportment, may, by concealing their delusions for a time, convince those not acquainted with their cases of their perfect sanity, while they are really dangerous lunatics. Of this he gives a notable instance which occurred in the Asylum of which he has charge. The affairs of the Institution are in a flourishing condition.

NEW YORK. *Buffalo State Asylum for the Insane*: 1873.

From the Third Annual Report of the Board of Managers we make the following extracts:

The whole amount appropriated by the Legislature up to this time is five hundred and fifty thousand dollars (\$550,000), as follows:

By the Legislature of 1870.....	\$ 50,000 00
By the Legislature of 1871.....	100,000 00
By the Legislature of 1872.....	200,000 00
By the Legislature of 1873.....	200,000 00
Total.....	\$550,000 00

The expenditures have been as follows:

To December 31, 1871.....	\$ 99,375 04	
To December 31, 1872.....	225,531 23	
To December 31, 1873.....	221,114 02	\$546,020 39
Leaving a balance unexpended of.....		\$3,979 61
Balance in the hands of the Treasurer of the Board.....	\$1,979 61	
Balance in State Treasury.....	2,000 00	\$3,979 61

The work of construction on the buildings was resumed on the first day of April, and closed on the first day of November last.

The walls of the administration building and male wings "A" and "B" are laid up two full stories. The window sills are also laid up on the third story of the wings. The corridors connecting the administration building with wing "A," and that from the latter to wing "B," are laid to their full height and coped.

The walls of the rear buildings, consisting of the kitchen, fan room, engine room, boiler room, coal room, work shop and bakery, are all laid up and enclosed, with their roofs on. The walls of the fire-proof corridor connecting the kitchen with the male wing "B" are laid, the arches turned and walls coped. The chimney, which is to be one hundred and ten feet high, is up thirty feet. The horizontal flue leading from the engine room, and that connecting the bakery with the main flue, is finished. The large plenum connecting the fan room with the main buildings is completed. Water pipes connecting with the city mains have been introduced into all the above buildings, while tile sewer pipes have been laid in the main buildings and kitchen, ensuring them thorough drainage.

The foundation walls of the male wings "C," "D" and "E" are also laid up to grade and ready for the superstructure. The



walls not under roof are covered and well protected for the winter. Of the red sandstone used for the exterior facing of the building there is now on the ground cut and ready for use a quantity sufficient to carry up the third stories of the administration building and male wings "A" and "B." There is also about three thousand yards of sand on the ground—altogether material enough to carry on the work for about two months in the spring. There is also piled upon the ground walnut, cherry, maple, oak, chestnut and pine lumber, and joist and timber to the value of nearly forty thousand dollars; the quantity of each particular kind and the price paid for it was given in detail in our last Annual Report.

In that report the Board used the following language: "The work is in a condition to be pushed vigorously in the early spring, and if a suitable appropriation is made the walls of the administration building and of wings 'A' and 'B' can be completed and the buildings roofed during the year. The lumber already purchased will be suitably seasoned, so that the interior can be finished during the winter of 1873-74, and the asylum ready for the reception of patients in June or July following.

"To complete this work and carry forward the necessary improvements on the grounds, not less than five hundred thousand dollars (\$500,000) will be required. *If a less sum is appropriated the result will be the delay of another year before the buildings now in progress of construction can be occupied.*"

A less sum (\$200,000) was appropriated, and the result is as predicted. The Board was obliged in consequence to "make haste slowly" in forwarding the work. The contractors were compelled to work a much less force than could have been employed with advantage, and every portion of the work was more or less embarrassed.

They conclude their report as follows:

It is the earnest desire of the managers that these buildings, now so far advanced, may be completed and utilized at the earliest practicable moment. They respectfully and earnestly ask the Legislature to grant a further appropriation of not less than three hundred thousand dollars (\$300,000) for the current year. This sum they are confident will enable them to finish the buildings now approaching completion. They can not, without doing injustice to their own sense of duty, ask for a less sum, while the Legislature might without prejudice to the interests of the State increase it. By so doing it can the sooner make its previous expenditures available

and enable the managers at an early day to put the grounds and buildings in a condition to receive new patients, and also to relieve kindred institutions in the State now crowded beyond their capacity.

NEW YORK. *Fourteenth Annual Report of the State Lunatic Asylum for Insane Criminals:* 1873. Dr. JAMES W. WILKIE.

There were in the Asylum, at date of last report, 87 patients. Admitted during the year, 22. Total, 109. Discharged recovered, 11. Not recovered, 8. Died, 4. Total, 23. Remaining under treatment, 86.

Investigation regarding the causation of insanity shows that by the certificates of the prison physicians, more than one-half of the cases of insanity occur as the result of *Masturbation*. We quote the Doctor's remarks upon the subject:

If this be true, that a single cause exerts such a powerful influence for evil, it is an alarming fact, and some suitable and efficient preventive measures should be devised and adopted before the ruin of the convict is accomplished. Setting aside all humanitarian considerations, the interests of the State alone demand some action upon the part of those in charge of our prisons to avert so great a calamity. Not only is there positive loss of service to the State during the term of sentence, but the great mass of victims of this abandoned practice remain through life a public charge and drain upon the treasury of the State. No one cause so potent for evil should be left without at least an earnest effort for relief. When these cases reach the Asylum they are generally beyond restoration, and remain as objects of care rather than cure.

With these facts before us it seems a duty we owe the State and the unfortunate victims of vice committed to our care, to see to it that every exciting cause is removed and every restraining influence within our power interposed. The healthful exercise of the moral and intellectual faculties diverts the mind from indulgence of sensual passion. Individuals whose time is not properly occupied by labor, business or intellectual pursuits almost inevitably become the victims of the lower propensities. Idleness is the parent of vice.

This vice, I believe, often exists as a symptom of cerebral dis-

ease, and what is sometimes regarded as cause may be merely result. It often occurs as a morbid irresistible impulse, defying all efforts of the will toward restraint. Patients have entered this Asylum who had been subjected to most cruel local irritation, but the vice was not checked. Instruments of torture have been devised and secured upon the hands, but the habit continues. The will is perverted, and in defiance of irritations and instruments of torture, the victim of this vice is impelled on as by madness unmindful of the agonies he is enduring.

We have no knowledge of any such instruments, and were not aware that applications of the kind were made by the physicians to the prisons, or by other practitioners.

Traumatic irritation of the spinal cord may cause priapism with no assurance of virility; so may this impulse exist as the result of certain forms of cerebral irritation and not as the prompting of a healthful desire.

The fact that a large number of convicts are insane when committed to prison, is fully borne out by the statistics presented: "Of two hundred and seventy-six entries from the prisons, fourteen were cases of feigned insanity, twelve had been readmitted, leaving two hundred and fifty distinct cases of insanity. Fifty-four of these were certified as insane when received into prison, and fifteen had suffered from an attack of insanity previous to entering prison; while a number were transferred to this Asylum within a very short period of time after their admission to prison, of whose previous mental condition no account is given."

The Doctor's comments upon this statement of facts are judicious, and well worthy of reproduction and of careful attention. He gives an interesting case in which epilepsy was detected in a convict committed to his care, the existence of which had never been suspected even by the family or friends.

A young man was received into this Asylum August 27th, 1872, from one of our State Prisons who had been convicted thirteen days previously of assault to kill. On being arraigned, he put in a plea of acting in self-defense. No inquiry was instituted as to his mental condition, nor had any derangement of his mental faculties been suspected by his most intimate associates, and not until his entrance to prison was it detected. This young man labored under the delusion that he was assaulted and abused by his fellow-patients and the attendants in the Asylum; always complaining of his treatment, and ever ready to act on the defensive. Application for his pardon was made, which I opposed, on the ground that he was a dangerous lunatic. His brother, who made the application for his pardon, a gentleman of high respectability, informed me that no mental disease had been suspected prior to his imprisonment. Soon after entering the Asylum he gave unmistakable evidence of larvated epilepsy. The echo sign in epilepsy as shown in a paper read by Dr. Echeverria before the Association of Medical Superintendents, at Baltimore, in May last, was beautifully illustrated in several of his letters, and of great interest as showing the rapidity with which the nervous disturbance was developed.

This young man became rapidly demented during the last three or four months of his life. He was seized with convulsions while walking the hall August 15th, and died thirty-six hours thereafter *in status epilepticus*.

This case fully exemplifies the insidious nature of the disease, the dangerous character of those thus afflicted, and the necessity of the exercise of great care on the part of prosecuting or judicial officers.

The new building provided for by the Legislature is now enclosed; when completed, it will accommodate eighty patients.

The convicts seemed restive and intent upon escape, and it was a difficult task to keep them in their places and at work. Too many were employed, and contentions often existed as to whose turn it was to labor, a large number being constantly idle, and some most of the time in mischief. On so large a building it was impossible for the keeper's eye to be always upon so many, and they often took advantage of such opportunities to plan escapes.

I think it would have been a large saving of expense both to the State and to the building appropriation to have employed outside labor when we take into account the number of extra keepers required for the labor performed. Very few skilled mechanics were found among the number. After convict labor was dispensed with, patients from our halls were employed as laborers, and it was found that four lunatics could do the work of nine convicts upon the derriek and have plenty of time to rest.

PENNSYLVANIA. *Annual Report of the Pennsylvania State Hospital for 1873.* Dr. JOHN CURWEN.

There were in the Hospital, at date of last report, 467 patients. Admitted since, 158. Total, 625. Discharged recovered, 40. Improved, 31. Unimproved, 112. Died, 34. Total, 217. Remaining under treatment, 408.

The Hospital has been somewhat relieved by the transfer of eighty patients to the New State Hospital, at Danville. On the night before Christmas, 1872, the Institution suffered from fire in the entire destruction of the building, containing the bakery, wash house, ironing and dry room. It has, however, been rebuilt, and several improvements were made in its reconstruction. The health of the inmates has been good, for which, credit is given the improved means of ventilation by a fan. This has been kept in constant operation during the year. An appropriation of \$15,000 is asked, for making extraordinary repairs to the wards and buildings of the Institution.

NORTH CAROLINA. *Report of the North Carolina Insane Asylum for the year 1873.* Dr. EUGENE GRISSOM.

There were in the Asylum, at date of last report, 233 patients. Admitted since, 50. Total, 283. Discharged recovered, 11. Improved, 6. Unimproved, 3. Died, 13. Eloped, 2. Total, 41. Remaining under treatment, 242.



No additional provision has been made in the State, to accommodate the large number of its insane, mostly of the chronic class. There are now outside of the Institution, some five hundred insane people. "The overwhelming preponderance of chronic mental disease, of those under treatment here, as well as the applications for admission on *file*, over the acute cases, presents suggestions of a serious character. Perhaps not more than ten per cent. of our present household, and a smaller proportion even of the several hundred applications now pending, the history of whose cases have been forwarded and placed on file, can, with any confidence, be pronounced curable." During the year two hundred and sixty-three applicants have been refused, for want of room.

ALABAMA. *Thirteenth Annual Report of the Alabama Insane Hospital: 1873.* DR. PETER BRYCE.

There were in the Hospital, at date of last report, 338 patients. Admitted since, 79. Total, 417. Discharged recovered, 45. Improved, 8. Unimproved, 5. Died, 29. Total, 87. Remaining under treatment, 330.

The figures given above show a higher per cent. of recoveries, upon the number of admissions, than during any year since the opening of the Institution, and is largely attributed to the fact, that preference has been given to acute cases of insanity, among the numerous applications. The report is mainly occupied with a recital of the financial embarrassment of the Institution.

The sum allowed by the State is \$4.00 per week per patient, and this is to cover all the expenses of the hospital. This amount, small as it is, has been reduced by direct loss to the Institution of \$20,000, mostly occasioned by the depreciated value of State warrants. This has entailed much inconvenience, and even priva-

tion upon the officers and patients. We quote from the report the following remarks:

In closing this branch of my report, I have but one other suggestion to offer, and to this, the most important of all, I invite your especial and attentive consideration. If this Hospital is still to be kept open for the reception and treatment of the indigent insane from the different counties in the State, it will be absolutely necessary to secure from the State, beyond peradventure, the payment of their expenses promptly and in current funds. If the harrowing scenes of the past year are to be re-enacted in the future—if the helpless inmates of the Hospital are to be half fed and half clothed; their nurses and attendants driven by their own necessities to abandon their post of duty; their creditors and contractors to continue clamorous for their dues, and threatening to discontinue their supplies, and their officers and Trustees to be perpetually harassed and discouraged by difficulties which they are powerless to remove—if, I repeat, this state of things is to continue another year, then it were better, far better, both for the reputation of the State and the well-being of these poor, dependent creatures that the doors of the Hospital be closed against their further admission, and those already here returned to their respective homes.

KENTUCKY. *Report of the Fourth Kentucky Lunatic Asylum:*  
1873. Dr. C. C. FORBES.

This Institution was created by an act, passed February 5, 1873, which provided for the changing of the "State House of Reform for Juvenile Delinquents," into an Asylum to receive the Chronic Insane. One ward was opened on the eighth of August, by the reception of twenty-one male patients, and the Institution was declared regularly opened, by proclamation of the Governor, on the fifteenth of October, and was speedily filled to its utmost capacity. There have been admitted 159 patients, of whom four have died, and three have escaped. The buildings consisted of a "central, or main building," "the shop" and "the school building," and have been remodeled so that the central building

now contains three wards, with accommodations for eighty patients. The officers' quarters are located in the front portion, and the kitchen and laundry in the basement. The "shop" building was divided by a corridor in the center, with dormitories on either side, to accommodate forty-five patients. A day room was arranged in the basement, and a common dining room, in which all the patients in the house take their meals. The school building was similarly divided as to wards, and has a capacity for about thirty-five patients. The shop and school buildings are occupied by the men, and are distant from the central building, the one fifty and the other seventy-five yards. The sleeping rooms for patients are all associate dormitories. The Institution is spoken of as a representative of the block or pavilion plan. The Doctor asserts diffidence in recommending it, though he enumerates some arguments in favor of it, and confesses to an inability to appreciate any serious inconvenience in the system, provided, however, the different blocks are located within reasonable proximity, and furnished with facilities for inter-communication. The removal of restriction as to the class of patients to be received, as this has been designated an asylum for the chronic insane, is advised by the Doctor. The reasons therefor are found in the greater economy in transportation, and the fact that the provision made in the other asylums for the treatment of acute cases, is in excess of the demand, and disproportionately great, when compared with the number of the chronic insane.

CALIFORNIA. *Biennial Report of the Insane Asylum for the State of California: 1873.* Dr. G. A. SHURTLEFF.

There were in the Asylum, at date of last report, 1,090 patients. Admitted to October 1, 1872, 506. Total, 1,596. Discharged recovered, 240. Improved,

30. Unimproved, 3. Eloped, 12. Died, 188. Total, 473. Remaining under treatment, 1,123. Admitted to July 1, 1873, 401. Discharged recovered, 185. Improved, 18. Unimproved, 1. Eloped, 12. Died, 152. Total, 368. Remaining under treatment, 1,156.

Dr. Shurtleff is awaiting the erection of the new Institution at Napa, which will afford relief to the overcrowded condition of the Asylum, "with somewhat of the fearful suspense of the mariner upon an overladed and sinking ship, who, though he sees the approaching succor in the distance, is yet doubtful whether he can hold out until it reaches him." The recoveries under such unfavorable circumstances are unusually large, being forty-six per cent. on the admissions. From the causation as given in the commitments, and his knowledge of the history of cases, the opinion is expressed that intemperance has been the efficient cause of twenty per cent. of the admissions. The subject of care of insane convicts is treated at some length, and the conclusion reached that separate provision should be made for this class in connection with the prison, and under the immediate charge of its medical officer.

WISCONSIN. *Fourteenth Annual Report of the Wisconsin State Hospital for the Insane*: 1873. DR. MARK RANNEY.

There were in the Hospital, at date of last report, 373 patients. Admitted since, 212. Total, 585. Discharged recovered, 39. Improved, 76. Unimproved, 134. Died, 22. Total, 271. Remaining under treatment, 314.

Although 117 patients were transferred to the new Asylum at Oshkosh, the Institution is now filled to its proper capacity, and additional room is demanded for the reception of numerous applicants. The necessity and advantages of early treatment in an asylum, both

in a curative and economic point of view, are fully stated. The demands for greater facilities for classification is made an argument for the speedy completion of the Northern Asylum, and for enlargement of this Institution. Suggestions are made regarding various improvements and additions to the buildings and grounds of the Asylum. The necessity of strict supervision over, and accountability of a Superintendent to a Board of Trustees, governed by a sense of their great responsibility to the public and to the patients under their care, is strongly urged. The great value to an institution of faithful and competent attendants, and the difficulty of obtaining them is the subject of some well pointed remarks, and a scale of wages making an annual increase of compensation proportioned to length of service, is recommended. Dr. Ranney's report gives evidence of his careful attention to the wants of his patients and employés, and of a full appreciation of the requirements, demanded to make the Institution of which he has charge a model Hospital, for the cure and treatment of the insane, and one embodying the improvements which have been introduced in construction, since the date of its erection.

WISCONSIN. *First Annual Report of the Northern Hospital for the Insane: 1873.* DR. WALTER KEMPSTER.

There were admitted during the year, 214 patients. Discharged recovered, 2. Improved, 1. Unimproved, 1. Died, 5. Total, 9. Remaining under treatment, 205.

This Institution is now filled to its utmost capacity, and the pressing demands for admission are such, that recent cases can only be received upon the removal of those of the chronic class. One hundred and seventeen chronic cases were transferred from the State Asylum,



at Madison, and the remainder were received from the counties of the district. Great disappointment was felt that all the insane could not be accommodated, and every effort has been made to enlarge the capacity of the Asylum. The rooms set apart as an "Infirmery," a "Museum," the day rooms and parlors of the wards, have been appropriated as associate dormitories. It is to be regretted that the Institution is thus early filled with cases which present so little hope of recovery, as it is thus crippled in its ability to care for that class, which requires the advantages of a curative hospital. The Doctor, however, fully appreciates the disadvantage under which he labors, and treats of it at length.

Various topics are touched upon briefly, as the causation and the treatment of insanity, the frequency of its occurrence, and the expectation of life among the insane; also the necessity of increased hospital accommodations as shown by the number of the insane in the State, and the location of hospitals as to distance. This presentation of general principles is followed by a statement of the labor accomplished during the year, and of the demands for the future. It does credit to the Doctor, and will do much to increase the confidence already felt in his ability, to conduct the affairs of the Institution and establish it upon a secure basis. We quote from the Managers' Report, their remarks concerning the Superintendent.

And it is proper to say in this connection, that we regard ourselves, as well as the people of the State, eminently fortunate in starting out in the working operations of the Hospital, with the services of so competent a man in all respects. He came to us fitted by experience in the care of the insane, from one of the first institutions of the kind in the United States, that of Utica, N. Y., and during the labor of preparing the building for service, he gave us invaluable aid in all the departments of labor. Since the Institution has gone into operation, when his services more especially

in a curative and economic point of view, are fully stated. The demands for greater facilities for classification is made an argument for the speedy completion of the Northern Asylum, and for enlargement of this Institution. Suggestions are made regarding various improvements and additions to the buildings and grounds of the Asylum. The necessity of strict supervision over, and accountability of a Superintendent to a Board of Trustees, governed by a sense of their great responsibility to the public and to the patients under their care, is strongly urged. The great value to an institution of faithful and competent attendants, and the difficulty of obtaining them is the subject of some well pointed remarks, and a scale of wages making an annual increase of compensation proportioned to length of service, is recommended. Dr. Ranney's report gives evidence of his careful attention to the wants of his patients and employés, and of a full appreciation of the requirements, demanded to make the Institution of which he has charge a model Hospital, for the cure and treatment of the insane, and one embodying the improvements which have been introduced in construction, since the date of its erection.

WISCONSIN. *First Annual Report of the Northern Hospital for the Insane: 1873.* DR. WALTER KEMPSTER.

There were admitted during the year, 214 patients. Discharged recovered, 2. Improved, 1. Unimproved, 1. Died, 5. Total, 9. Remaining under treatment, 205.

This Institution is now filled to its utmost capacity, and the pressing demands for admission are such, that recent cases can only be received upon the removal of those of the chronic class. One hundred and seventeen chronic cases were transferred from the State Asylum,

at Madison, and the remainder were received from the counties of the district. Great disappointment was felt that all the insane could not be accommodated, and every effort has been made to enlarge the capacity of the Asylum. The rooms set apart as an "Infirmity," a "Museum," the day rooms and parlors of the wards, have been appropriated as associate dormitories. It is to be regretted that the Institution is thus early filled with cases which present so little hope of recovery, as it is thus crippled in its ability to care for that class, which requires the advantages of a curative hospital. The Doctor, however, fully appreciates the disadvantage under which he labors, and treats of it at length.

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as a physician have been called in, he has shown how fortunate we have been in our choice. We are gratified to bear testimony to his untiring industry, his evident culture and skill in his profession, his unvarying kindness in treating his unfortunate patients, and his general fitness for the difficult and responsible duties to which he has been called.

We are glad to see that Dr. Kempster proposes, thus early in the history of the Institution, to institute pathological investigations by means of the microscope and photography, in pursuance of the plan already adopted in the Asylum at Utica. The Managers of the Asylum show a commendable spirit in fully endorsing the suggestion of the Superintendent in regard to furnishing the necessary apparatus. They use the following language, quoted from a report of one of the visiting committee, "who is himself a physician of high reputation":

Having now completed my quarterly examination for this year, I would, both as a medical examiner, and as a citizen to whom the success of the Institution is very dear, call your attention to what I consider the great duty of a Board of Trustees, viz: To make a complete success of an Institution of this character, they must, with all their other duties, become nurseries for scientific attainment. I say, right where the experience is, there let the difficulties, of whatever nature, be sought out. I would herewith most earnestly entreat that there be facilities furnished to the Superintendent to inaugurate and organize the systematic carrying out of all chemical and microscopic examination—also photography and photo-micrography. For I most fervently believe that this will prove the great highway whereby we may arrive at the highest and best treatment of insanity. Thus you may be benefactors not only to the unfortunates within your walls, but to the whole scientific world.

WASHINGTON TERRITORY. *Report of the Asylum for the Insane of Washington Territory: 1873.* DR. STACY HEMENWAY.

There were in the Asylum, at date of last report, October, 1871, 23 patients. Admitted since, 41. Total,

64. Discharged recovered, 13. Improved, 4. Not insane, 1. Eloped, 4. Died, 6. Total, 28. Remaining under treatment, 36.

“Under the present system of management one party furnishes the food and raiment, and selects persons to serve as attendants. The other party is required by his articles of agreement with the Territorial authorities, to exercise full control over the medical, moral and sanitary management of the Institution. In consequence of this arrangement, though, perhaps, the best that could have been made under the existing laws, there exists *glaring inconsistencies*.” In the report of the year the Superintendent asks from the Legislature the passage of a law establishing a regular hospital organization, and suggests as a basis the propositions passed by the Association of Medical Superintendents, in May, 1853. He supports this request by showing the defects and difficulties inherent in the present system, and quotes from the statements of others regarding the necessity of having a Board of Trustees, and a Superintendent, entrusted with the full power of management and control, and held to a strict accountability. His report should convince the Legislature of the necessity of action, and the adoption of the proper form of organization.

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#### REPORTS OF FOREIGN ASYLUMS.

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*Forty-Third Report of the Belfast District Hospital for the Insane: 1873.* ROBERT STEWART, M. D.

*Fifty-Third Annual Report of the Dundee Royal Asylum for Lunatics: 1873.* JAMES RORIE, M. D.



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*Fifty-Third Annual Report of the Dundee Royal Asylum for Lunatics: 1873.* JAMES RORIE, M. D.

*Thirty-Third Annual Report of the Crichton Royal Institution and Southern Counties Asylum: 1872.* JAMES GILCHRIST, M. D.

*Twenty-First Report of the Derbyshire County Lunatic Asylum: 1872.* J. MURRAY LINDSAY, M. D.

*Seventy-Seventh Report of the Friend's Retreat, near York: 1873.* J. KITCHING, M. D.

NEW SOUTH WALES. *Report of the Hospital for the Insane, Gladesville: 1872.* F. NORTON MANNING.

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#### TRANSACTIONS OF SOCIETIES, PAMPHLETS, &c.

*Transactions of the Minnesota State Medical Society: 1873.*

This volume contains several articles of interest. The first one is by a member of our own specialty, Dr. C. K. Bartlett, Superintendent of the State Insane Asylum, and is entitled, "Insanity as a Symptom of Brain Disease, its Physical Cause and Treatment." He first speaks of the difficulties which attend the investigation of diseases of the brain and nervous system, and of the theories regarding insanity. The statement of his subject, in the words previously given, fully defines his own position. "The three leading causes of insanity are, hereditary diathesis, brain work, and reduced vitality." These views are supported by facts and principles generally received, and which carry conviction by their statement. The subject of treatment is disposed of by reference to a few underlying general principles. It will be valuable to the profession in inculcating correct theories and ideas, upon the subject of insanity and its treatment.

The other articles are the address of the President, Dr. W. W. Mayo, on "The Relation of Physicians to the Public and to each Other," a prize essay by Dr. Franklin Staples, on "Catarrhal Inflammation as an Element in Uterine Disease," and one by Dr. C. H.

Hand, on "Phthisis as related to Syphilis and Scrofula." These are followed by reports of Committees on various subjects in Surgery and Medicine.

In the character of the articles, and the manner of presentation, the State Society of Minnesota has taken high rank among the best of our medical organizations.

*Proceedings of the Medical Association of the State of Arkansas.*  
[Fourth Annual Session]: 1873.

The sessions of the Society extend over a period of three days, and a large part of the proceedings is occupied with the minutes of the Secretary. The President, Dr. D. A. Linthicum, delivered the annual address. It was of a practical character, and related to the establishment of fees for special services and to matters of local interest to the members. A few cases are reported, and a paper of considerable length on the "Vital Statistics of Little Rock," is presented.

*Medical Society of Washington Territory.* [Second Annual Proceedings]: 1873.

This is a neatly printed pamphlet of about fifty pages. It contains the "President's Address," an article on "Compound Fractures," a report of "A Case of Ligature of the Left External Iliac Artery for Aneurism," a case of "Double Hernia in the Left Pleural Cavity," and the report of the Superintendent of the Insane Asylum, previously noticed.

*Felonious Homicide: Its Penalty and the Execution thereof Judicially.* By ALONZO CALKINS, M. D. [Read before the Medico-Legal Society of New York.]

The author gives a short account of the different methods of capital punishment, which have been employed both in ancient and modern times. Among others, he mentions that of compression upon the carot-

ids and jugulars, as used by the Thugs of India, which produces absolute *syncope* in a few seconds, and that which may be denominated the chemical, by the administration of prussic acid. "Adopt either of these two resorts as specified, then would be secured in the conducting of our capital executions these *Four Pre-requisites: Certainty in Result, Celerity in Action, Painlessness in the Endurance*, and the *Maintenance* of a decorous *Solemnity*."

*Emotional Insanity.* By DAVID DUDLEY FIELD. [Read before the New York Medico-Legal Society.]

The author gives his own idea of crime and punishment, and quotes the charges of the judges in several well known criminal trials, as showing the view entertained by the legal profession, as to what constitutes insanity and irresponsibility before the law. These opinions are to him so various and unsatisfactory, that Mr. Field is led to propose a standard of legal responsibility, which he presents in the following language: "was he *capable of knowing and refraining?*"

Dr. William A. Hammond in a monograph entitled, "Insanity in Its Relation to Crime," which was reviewed in the last number of the JOURNAL, on this same subject, gives utterance to the following: "Now any individual having the capacity to know that an act which he contemplates is contrary to law, should be deemed legally responsible and should suffer punishment." These are wonderfully similar ideas, and convey to the readers the impression that Mr. Field and Dr. Hammond, bear a strong resemblance to each other in their "mental processes."

From the question of responsibility, the author would exclude children, idiots and imbeciles, though the only criterion or measure of mental power is found



in this sentence. "There must be a capacity to reason, and a power of reason over the will sufficient to deter." If this means anything, it must mean "self-control." It seems, however, that in making this exclusion, he virtually yields the whole question, and must consider the insane, who, through disease, have lost this very power, as being irresponsible.

Regarding the medical definition of insanity he quotes the following from one, for whom he claims that there is no higher authority: "As no two brains are precisely alike, so no two persons are precisely alike in their mental processes. So long, however, as the deviations are not directly at variance with the average human mind, the individual is sane; if they are at variance he is insane." Now we know not how many of the medical profession would be willing to accept this as a scientific or correct definition, but we do know that to many it would seem the veriest twaddle. It is like a huge drag-net which would include within its meshes, the highest order of intellect, the man of eccentric habits of thought and action, and the imbecile and idiot, and leave entirely untouched a large class of lunatics who are the most dangerous to themselves and society. Our author then proceeds to divide insanity into the forms of perceptual, intellectual, emotional and volitional, and loses himself in his own divisions. We quote:

It should seem thence to follow that though there be such a kind of insanity as perceptual, and also such a kind as emotional, yet that neither of them taken by itself, nor both together, can justly exculpate the offender or relieve him from punishment. For example, if a person suffering under perceptual insanity thinks he sees an angel, and hears a voice, as of the voice of God, commanding him to kill his child, and acts in obedience to the supposed command, I insist that, nevertheless, he should be punished for it.

The mere statement of such a case is sufficient and needs no comment. We recognize in this the strong overpowering mastery of delusion, under which he "could not help" committing the act attributed to him.

The great difficulty under which so many labor, in judging of the responsibility of the insane, is found in the effort to make divisions, and distinctions of forms of insanity, in accordance with metaphysical theories regarding the mind and mental operations. And secondly, in ignoring the fact that the mental phenomena are but symptoms of disease of the brain, and not in any sense of the mind itself. Insanity may and does present many manifestations, but they are not so distinct that it is within the scope of human possibility to say in any case, that the emotions, or perceptive, or volitional faculties are alone disturbed.

Each case, in which insanity is supposed to exist, must be judged not by the average ordinary human intelligence, but by the changes produced by disease of the brain, when compared with the individual's own healthy and normal mental state. In instituting this comparison it will be found that all these various metaphysical divisions, which go to make up the sum total, called the mind, may be disturbed to a greater or less extent, and that there is no such definite line of demarkation, as would justify any such nomenclature as the one before us.

The statement regarding the government of insane asylums, that it is founded upon the assumption that the unsound mind is influenced by motives, and can be restrained by fear, is such a truism as must provoke a smile to those accustomed to treating the insane.

The author's idea of insanity must be equal to that of many people, who imagine that the insane are incapable of appreciating anything, and are much pleased

to find that a relative or friend, can recognize their faces. The processes of reasoning are often as well and perfectly carried out among the insane, as among the sane, the difference being that in the insane, the presence and power of a delusion leads to the adoption of false premises. They are often, outside the sphere of the delusions which characterize their condition, influenced by the same motives as the sane, though from the presence of disease, which may be a constantly variable element, they are unstable and do not always respond to the ordinary motives which govern the sane.

It is the fact that the Asylum by its very system of organization and discipline, supplies in part the control which the insane man lacks, and toward which he finds little aid outside its walls. This is not an argument in favor of the full responsibility of the insane, any more than the parental government and control exercised in the case of young children, is an evidence that they are to be held accountable before the law for all their actions and conduct. The paper as a whole can only be looked upon as a failure, in the attempt to elucidate the subject of responsibility, as all such must necessarily be in which the fundamental principle that insanity is a disease of the brain, is overlooked, and in which the effort is made to subdivide the mind into various faculties, and to place a limit by conventional boundaries, to the abnormal mental operations.

*Cottages for the Insane.*

An article upon this subject has recently appeared in the *New York Medical Journal*, by Dr. W. B. Hallock, Assistant Physician to the Connecticut General Hospital for the Insane. There is nothing new in this paper, and the arguments adduced are already familiar

to those who have been interested in this discussion, and to combat them would be "thrice to slay the slain." The problem of the proper provision for the insane, is one to which much thought has been given, by the most able and experienced men in this and other countries, for many years, and is still a vexed question. Dr. Hallock, however, disposes of it in a very summary, and to himself apparently satisfactory manner as follows:

"From what we have observed during an experience of some years with the insane, we are led to the belief, that the question of provision is one easy of solution; indeed, we can see no reason why it should be considered so difficult and complicated, unless it be that their real needs with respect to buildings are not understood."

A little longer experience may enable him to "see" more, and we hope, more clearly. It is said, "a single swallow does not make a summer," and the placing a few patients selected from the three or four hundred of a State Institution, as has been done at Middletown, Conn., does not solve the question. This seems to be the sum of his observations. He disposes of the Association of Superintendents with one stroke of his trenchant pen. They are old deluded noodles, poor fellows. "Some writer has said that the present methods of distributing charity, as a whole, are costly and bungling; they waste more than they help. This truth is especially applicable to the wholesale policy of the Association of Superintendents of American Institutions for the Insane. This Association is still reluctant to give up this one remaining traditional idea of prison walls indiscriminately surrounding the insane."

*Fifth Annual Report of the Presbyterian Hospital of the City of New York: 1873.*

*On Anæsthesia, Hyperæsthesia, Pseudo-Æsthesia, Chiefly as met with among the Insane.* By W. A. F. BROWNE, M. D., F. R. C. S. E., late Commissioner in Lunacy for Scotland.

This is the substance of a lecture delivered to the members of Prof. Laycock's Class of Psychological Medicine, on their clinical visit to the Crichton Institution for the Insane, Dumfries, July 26, 1873. It consists of a clinical record of cases, showing the disturbances of sensation frequently existing among the insane. It contains many interesting and unique cases, and shows research and labor in its preparation.

This paper is from the pen of one of the oldest and ablest men of the profession, and shows the controlling and absorbing interest he still retains in the labor to which he has devoted his life.

*Expert Testimony.* By THADDEUS M. STEVENS, M. D. [From the *Indiana Journal of Medicine*, for October, 1873.]

The special form of Expert Testimony treated of, is that relating to toxicological examinations. Nearly one-half of the pamphlet is occupied with a reference to the Wharton trial.

*An Investigation Concerning the Mechanism of the Ossicles of Hearing and the Membrane of the Round Window.* By CHAS. H. BURNETT, M. D., of Philadelphia. [Reprinted from the *Archives of Ophthalmology and Otology*: Vol. II., No. 2, 1872.]

*On the Construction and Revision of By-Laws of the Retreat for the Insane at Hartford, Conn., with letters on Hospital Organization and Government.* [Printed for private use]: 1873.

*Peristaltic Arterial Action: Objections to this Theory.* By JOHN J. MASON, M. D. [Reprinted from the *New York Medical Journal*, December, 1873.]

*On the Granular Cell found in Ovarian Fluid.* By THOMAS DREYSDALE, M. D., of Philadelphia. [Reprinted from the *Transactions of the American Medical Association*.]



*Changes of Temperature and Pulse in Yellow Fever.* By JOSEPH JONES, M. D., of New Orleans. [Reprinted from the *American Practitioner*, for September, 1873.

*Report of the Health Officer of the City and County of San Francisco, for the year ending June 30, 1873.*

*Annual Report of the Commissioners of Emigration of the State of New York: 1873.*

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REVIEWS OF BOOKS, NOTICES, &c.

*The Principles and Practice of Medical Jurisprudence.* By ALFRED SWAYNE TAYLOR, M. D., F. R. S., Fellow of the Royal College of Physicians, Lecturer on Medical Jurisprudence in Guy's Hospital, in two volumes.

Also, *A Manual of Medical Jurisprudence*, by the same author. Seventh American Edition, by JOHN J. REESE, M. D., Professor of Medical Jurisprudence and Toxicology, in the University of Pennsylvania, &c., &c. Philadelphia, HENRY C. LEA: 1873.

It is seldom that a publishing firm is willing to take the risk, involved in placing before the public, at the same time, both an English and an American edition of the same book. This fact gives expression to the faith they have, in the value and saleability of the work thus lavishly put upon the market. Taylor's Jurisprudence has long been known to the members of the medical and legal professions. It was first met by them in their curriculum of studies, and has since occupied a place in many of their libraries. It was favorably received, from its short, comprehensive dealing with topics, which made it a ready book for reference, in regard to the general principles of the science. This feature of the book is still retained. The author, in his English edition, announces that several new chapters have been added,

increasing the number from eighty-seven to one hundred, and so enlarging the work as to demand it should be put in two volumes. New matter has been inserted in the sections on poisoning, wounds and personal injuries, and facts and cases have been added to the chapter of deaths from Asphyxia and Starvation, including the case of the *Welsh fasting girl*; also, to the chapters on Criminal Abortion, Infanticide, Insanity and Life Insurance. Where cases are not fully quoted, references have been made showing where additional information can be obtained. Some new engravings have been introduced. In the preface to the American edition, the author gracefully acknowledges his indebtedness to Dr. T. Romeyn Beck, whose work on Medical Jurisprudence antedates the time when lectures upon this subject were given in England, and who was the leading authority in both countries. He says "in looking back over the forty-eight years since I received my first lesson in Medical Jurisprudence, from the work of the late Dr. T. R. Beck, it is a great gratification to me to feel that I have been able to contribute to the literature of the science, and that my contributions have been so highly appreciated in the country which gave birth to Dr. Beck. For many years his was the only book on the subject in England and America." "Dr. T. R. Beck has passed away, but his work which had reached a tenth edition in 1851, will carry down his name to future years, as one of the most erudite and distinguished writers on Medical Jurisprudence." We are glad to note such words of recognition of the worth of one so well known, and so fully appreciated by the medical and legal professions, in America. For several years he was the editor of this JOURNAL, and the library of the Asylum at Utica, contains the collection of articles and cases, upon the subject of Medical Jurisprudence,

which constituted the basis of his work, amounting to seventy-six large volumes. We would also state, in this connection, that a new edition of Dr. Beck's work is being prepared by Dr. Chas. H. Porter, of Albany.

There is much to commend in the great variety of topics treated, and in the conciseness of statement which characterizes the work, but in some instances other qualities have been sacrificed to these. Cases are sometimes too much condensed, and references to them and to works, are sometimes made without sufficient explanation to make them fully intelligible. In all the volumes we find comparatively few American cases cited. Prof. Reese, however, has not forgotten the celebrated Wharton trial, which has been so often brought to the notice of the profession, from the statements and counter statements of the different experts engaged in the case. The section on Insanity is largely reproduced from former editions. The new matter is a great addition to the work, and is in consonance with the advance of science. The classification time honored in use, of Mania, Monomania, Dementia and Idiocy, is still employed, and the subdivisions into various forms of mania noticed, though, for the most part, not sustained by the author. We are disappointed that in a work written by medical men, the constant dependence of insanity upon morbid physical states is not more fully and positively stated. It is, however, recognized in the chapter on Homicidal Mania, in which, after enumerating the circumstances attending certain crimes, the writer says: "These are the main features of crime, and unless there is independent evidence of mental disorder, or of some bodily disease affecting the brain and destroying the power of self-control, the conclusion must be that the person is sane and responsible."

The doctrines of "irresistible impulse," and of "im-

pulsive insanity," receive little favor as they "have been strained in recent times to such a degree as to create in the public mind, a justifiable distrust of medical evidence on these occasions." This is a just rebuke, and had it been pointed with illustrative cases, which have occurred in this country within the past few years, would have acquired far greater significance.

We can but regret that the author has not noticed the subject of epilepsy, as it has acquired so much importance in its medico-legal aspects. Several cases have recently occurred, in which the presence of epileptic insanity has been pleaded in extenuation for crime. These trials and the articles written, have led the Association of Medical Superintendents to give special consideration to this disease in its various manifestations. From the prominence and frequency of these cases in judicial tribunals, the subject should have been fully presented in a work of the pretensions of the one before us. To the American edition we must give the preference as regards the size of the type and general appearance. In the English edition, the leaves are as usual uncut, the margins of the pages narrow, and the type quite small. It is, however, much fuller in statement and reference. The work is creditable to the publishers, and we doubt not will meet with a ready sale.

*An American Dictionary of the English Language.* By NOAH WEBSTER, LL. D. [Thoroughly revised and greatly enlarged and improved, by Prof. CHAUNCEY A. GOODRICH, D. D., late Professor of Rhetoric and Oratory, in Yale College, and NOAH PORTER, LL. D., President of Yale College.] Published by G. & C. MERRIAM: 1873.

The name of Noah Webster has long been a household word among all the English speaking people. Since the beginning of the present century, his works

have successfully competed for public favor, and have been recognized both at home and abroad as standard authorities. After preparing a spelling book, grammar, and reading book, the first published in America, he devoted himself to the great work of his life-time, the American Dictionary of the English Language, which was published in 1828. It at once appeared in England where a recent writer in the *Quarterly Review* states, "successive re-editing has as yet kept it the highest place as a practical dictionary." In 1847, it was revised and edited by Prof. Chauncey A. Goodrich, of Yale College, and afterward, in 1864, by Profs. Goodrich and Porter, who were assisted by men well known in the various branches of science. It has been carefully revised and improved by the addition of new matter, the introduction of terms to keep pace with the advance of science, and by illustrations intended to supplement the use of language, and more fully to convey the meaning of words and terms. In the new, illustrated edition before us, we have the highest development of scholarly attainment, in the production of a work which is unsurpassed in the English language.

*On the Mechanical Treatment of Disease of the Hip-joint*, by CHARLES FAYETTE TAYLOR, M. D., Surgeon to the New York Orthopædic Dispensary and Hospital, &c., &c. New York, WILLIAM WOOD & Co.: 1873.

This is a monograph of sixty-two pages, and gives us, as the author promises in his preface, a full exposition of the mechanical treatment of the disease under consideration. It is based upon the results of two hundred and thirty-six cases occurring in the Orthopædic Dispensary and Hospital. From this extensive experience the principles and statements made, are deduced. The disease, so far as treatment is concerned,



may be regarded as essentially traumatic. The character of the joint, its functions and muscular relations are treated of, and from them are derived the indications for mechanical treatment.

1. To relieve the pressure in the joint due to muscular contraction, by temporarily destroying the muscular irritability and contractility.

2. To protect the joint from weight and concussion. Motion in the joint without pressure is not only not injurious, but it is highly beneficial.

— To meet these demands, Dr. Taylor has devised an apparatus which is fully described and illustrated in the work, and its comparative advantages shown. We commend the work to those who are called upon to treat these unfortunate and too often neglected cases.

*On the Convolutions of the Human Brain*, by Dr. ALEXANDER ECKER, Professor of Anatomy and Comparative Anatomy in the University of Friburg, Baden. [Translated by JOHN C. GALTON, M. A. Oxon., M. R. C. S., F. L. S. Clinical Assistant, West Riding Asylum, &c., &c.] London, SMITH, ELDER & Co., 15 Waterloo Place: 1873.

*Clinical Researches in Electro-Surgery*, by A. D. ROCKWELL, A. M., M. D., and GEORGE M. BEARD, A. M., M. D. New York, WILLIAM WOOD & Co.: 1873.

This is a small volume of some seventy-five pages, and is divided into two chapters, in which are recorded a number of clinical cases treated by electricity. The first chapter is devoted to cases of Electro-Surgery. The facts are simply stated without theory or bias. Some of the cases were successfully treated, while others received no benefit. The cases reported were those of nævi, goitre, fibrous, cystic and cancerous tumors, and ulcers. The method employed was by *central* galvanization and electrolyzation, by *working up*

*the base*, a method of application peculiar to the authors. The second chapter contains cases of the use of electricity in skin diseases. Both of these fields of investigation are comparatively new. Little has been known by the profession regarding them, as they have heretofore been almost exclusively given up to quacks, who, from some instances of hap-hazard success, have gained, in certain localities, a sensational reputation. We congratulate the profession that the subject is being investigated in this country, by men who have already gained a high standing, and who have placed their honor and reputation at stake; and we shall expect much from them towards giving it its proper position in medical therapeutics.

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#### S U M M A R Y.

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—Dr. James C. Hallock resigned the Superintendency of the Ward's Island Emigrant Hospital for the Insane, on the first of December, 1873.

—Dr. Knapp, a former resident of Poughkeepsie, N. Y., has been appointed Superintendent of the Kansas State Insane Asylum, vice Dr. L. W. Jacobs.

—Dr. A. T. Barnes has been appointed Superintendent of the Southern Illinois Insane Asylum, located at Anna.

—Dr. James H. Denney has resigned the Superintendency of the Retreat for the Insane, at Hartford, Conn.

—Dr. D. B. Conrad, Superintendent of the Central Lunatic Asylum, located at Richmond, Virginia, resigned his position on the 15th of November, last. The Board of Directors appointed Dr. Randolph Barksdale, of Richmond, his successor.

—Dr. Edward R. Chapin resigned the position of Superintendent of the Kings County Asylum, on the 8th of November, 1873, and Dr. Carlos F. McDonald, the first Assistant Physician, was appointed to fill the vacancy thus created.

—Dr. Gorden Russell, of Hartford, Conn., has presented to the Retreat for the Insane, the sum of \$10,000 toward the erection of a memorial chapel for the use of its inmates.

—The new south wing for men patients of the Connecticut General Hospital for the Insane, has just been opened, with appropriate exercises. This completes the Institution and provides accommodation for four hundred and fifty patients.

—In the April number of the JOURNAL, the passage of a law creating two new asylums in Tennessee, was noticed. The Governor has appointed the Trustees for the Institution, to be located in the eastern portion of the State. The law makes wise provisions in the choice of site, for a farm of not less than three hundred acres, for a bountiful supply of pure water, for facilities for drainage, for location near a large city or town, for convenience of access by railroad, and for a plan in strict conformity with the propositions on construction of institutions, adopted by the Association of Medical Superintendents.

—We are pained to record the death of Dr. Chas. E. Van Anden, formerly Superintendent of the "Asylum for Insane Criminals" in this State. After his resignation of that position, some four years since, he engaged in the general practice of his profession, in Auburn, where, from his long connection with the Asylum, he had gained many personal friends. His death was occasioned by a peculiar and painful accident. On the 11th of October, while in the act of sneezing, he drew

into his throat a tooth, with the rubber plate attached. As all efforts to remove it proved unavailing, an attempt was made to push it downward into the stomach. This was supposed to have been successfully accomplished, and for a few days it was hoped he would recover. On the morning of October 19th, hæmorrhage began, which continued till 7 o'clock in the evening, when he died. The post mortem examination revealed the fact that the tooth and plate had lodged in the œsophagus at the bifurcation of the trachea. An abscess was formed at this point, which penetrated the lungs.

—Dr. William H. Rockwell, late Superintendent of the Vermont Asylum, died at Brattleboro, on the 30th of November last, at the advanced age of seventy-four years. For eighteen months he had been confined to his bed from a fracture of the thigh, caused by being thrown from a carriage, in May, 1872. Dr. Rockwell was born February 15, 1800, graduated from Yale College in 1824, and from the Medical Department of the same in 1830. He was soon after appointed Assistant Physician to the Retreat at Hartford, Conn., and in 1836, Superintendent of the Asylum at Brattleboro, Vt. The Institution had at that time but a corporate existence, and was without means for the erection of buildings. The endowment of \$10,000 was used in the purchase of the site, and in fitting up and furnishing the "White House," a building which was first occupied for the reception of patients. Aside from such limited aid as was subsequently rendered by the State, the Institution has reached the present magnitude, almost solely through his individual exertions. He devoted his life to the care and treatment of the insane, and has left a record of untiring industry, and self sacrifice to the profession of his choice. We learn that a

full account of his life and labors is being prepared for the Association of Superintendents, to which we shall gladly give space in the *JOURNAL*.

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LOCATION OF THE NEW NORTH WESTERN HOSPITAL FOR THE INSANE, PENNSYLVANIA.—The location selected by the Commissioners and approved by Gov. Hartranft, is situated in the town of Warren, a mile and a half from the borough line, and about two miles from the Philadelphia and Erie Railroad. The site has a level frontage of some two thousand feet, and has been occupied by a private residence. Upon the road is a gateway and porter's lodge, and leading therefrom a roadway of about one thousand feet, lined on either side by trees, which constitute a beautiful archway. The location has the advantage of other improvements made by the former owner: a hawthorn hedge, and a grove in the rear of the buildings, which has been used for picnics. The water supply of the Institution will be derived from the Conewango Creek, the outlet of Chautauqua Lake. The sewage will be carried into it at a lower point. The farm consists of three hundred and thirty acres, of which three hundred or more are good arable land.

Sandstone of the best quality for building can be quarried on the premises, while timber and brick can be obtained within a few miles. The Hospital is easy of access by various railroads from all parts of the district which the Institution is designed to accommodate. The cost of the site was \$33,000.

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THE CENTENNIAL CELEBRATION OF THE EASTERN LUNATIC ASYLUM, WILLIAMSBURGH, VIRGINIA, NOVEMBER 10, 1873.—The introductory address was made by Governor Walker, and the Centennial Address by



the Rev. Dr. Geo. T. Wilmer. Appropriate remarks were also made by Dr. Charles Nichols, Superintendent of the Government Hospital for the Insane, at Washington, and President of the Association of Medical Superintendents, by Dr. F. T. Stribling, Superintendent of the Western Asylum, Dr. D. R. Brower, Superintendent of the Eastern Asylum, Judge R. L. Henley and others. The exercises were held in the chapel of the Asylum, which was beautifully decorated for the occasion. Over the stand on the left was worked in evergreen, "1773," and on the right "1873." In the center was "E. L. A., Va," and on either side the names of "Siqueyra," "Barraud," "John M. Galt," "A. D. Galt," "John M. Galt, Jr.," "Henley," "Garrett," "Peticolas," the former Superintendents of the Asylum. Governor Walker claimed for Virginia, the establishment of the first public Asylum for the insane ever erected on this continent, and also wished to place on record the fact, that in providing the Central Asylum at Richmond, since the war, "*Old Virginia, in her deep poverty, had established the first Asylum for the poor colored man ever organized.*" Dr. Wilmer gave a historical sketch of the Institution, from which we learn, the first movement toward establishing the Asylum, was an act of the General Assembly, in 1769, appointing a Board of Directors and empowering them to purchase a tract of land and erect suitable buildings thereon. The present site was purchased, and under a plan submitted by Robert Smith, of Philadelphia, in 1770, the center building of the Asylum, one hundred by thirty-eight feet, and two stories high, was erected. Benjamin Powell was the contractor, and furnished all the materials, except stone steps, iron gratings, &c., which were brought from England. The building was completed in 1773, and turned over to

the Board, who elected James Galt, keeper of the Hospital. The first two patients were received October 12, and the keeper ordered to call in Dr. John Siqueyra, to visit the patients as often as might be deemed necessary. The cost of the building was £1,070, and of the material imported from England, £188, 13s. and 9d. In 1841 the functions of keeper and physician were blended in one officer, in the appointment of Dr. John M. Galt, who continued to be Superintendent till his death, in May, 1862. The address was interesting, and replete with fact and incident. We should have stated that full preparations had been made for the exercises of the evening, by a sumptuous dinner, given by the Superintendent, to the Governor, the Board of Directors and the invited guests. The celebration was an event long to be remembered by all who participated in its festivities.

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—We have received the Prospectus of the "*Archives of Electrology and Neurology*," to be issued at first semi-annually, and to be devoted to the special departments of electricity in its relations to medicine and diseases of the nervous system. The aim will be to make this both a scientific and practical journal, that it may meet the wants of the general practitioner, and serve as a medium of communication to those engaged in the special study and use of electricity. The plan of the work is broad and extensive, as indicated by its title. It will contain discussions of principles, reports of cases, abstracts of papers in home and foreign journals, condensed reports of the proceedings of scientific societies, reviews of books, &c. &c. It will be edited by Dr. George M. Beard, of New York, who is so well known to the profession, in connection with Dr. Rockwell, as the author of the work, "*Medical and Surgical Electricity*."

This gives an assurance of the ability of Dr. Beard to perform all he promises in this new field of labor.

—“*The Chicago Journal of Nervous and Mental Diseases*,” is the title of a new journalistic enterprise. This is to be a Quarterly, of from one hundred to one hundred and fifty pages, and promises to furnish a full variety of original articles, and translations from foreign journals upon subjects relating to the mind and nervous system. The editors state, that as but one journal in the United States is devoted exclusively to this department of medicine, they are not misapprehending the needs of the profession in projecting this journal. The editors are Dr. J. S. Jewell, Professor of Nervous and Mental Diseases, in the Chicago Medical College, and Dr. H. M. Bannister.